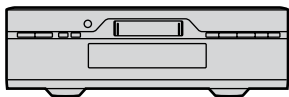


Panasonic

Digital Video Cassette Recorder

NV-DV2000EC

Operating Instructions



Mini **DV** PAL

Dear Customer

Thank you for purchasing this Panasonic Digital Video Cassette Recorder.

We recommend that you carefully study the Operating Instructions before attempting to operate the unit and that you note the listed precautions.

As this equipment gets hot during use, operate it in well ventilated place; do not install this equipment in a confined space such as a book case or similar unit.

IMPORTANT

Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

FOR YOUR SAFETY

■ DO NOT REMOVE OUTER COVER.

To prevent electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

This VCR has an On Screen Display (OSD) function which allows for various settings. The main operation buttons used in the function are listed below.

- SETUP:** To make the **SETUP** screen appear on the TV.
To return to the previous screen.
- EXIT:** To exit the screen completely.
- OK:** To confirm the selection, or to store.
- ▲▼◀▶:** To make selections from the On Screen Display.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

Contents

Before Use

Cautions	4
Caution for AC Mains Lead (for U.K.)	6
Check List	7
Controls and Connection Sockets	8
Editing Controller	10
Editing Controller Setup	12
Inserting the Cassette/Child Lock Function	12

Setting Up

Connections Using a 21-pin Scart Cable/ Connections Using an S-Video Cable	13
Connection to a Stereo Amplifier/ Connection to a Decoder	14

Playback and Recording

Playback	15
Recording	16
• One-Touch Recording (OTR)	16
Other Playback and Recording Functions	17

Advanced Operations

Search Functions	18
• Index Search System	18
• Photoshot Index Search System	18
Using the VCR with a Video Printer	19
Using the VCR with a Computer	20

Various Settings

Clock Setting/Shipping Condition	21
Settings for VCR Functions	22

Preparations for Editing

Editing Functions	25
Creating the Tapes For Editing	27
Connecting with a Panasonic Digital Video Camera	28
Connecting Two Digital Video Cassette Recorders (Both Panasonic models)	30
Connecting an S-VHS (VHS) Video Equipment with an Edit Socket	32
Connecting a Video Equipment with a LANC Socket	34
Settings for Editing	36

For Quick Editing

Album Function	38
Editing when Not Using an Edit Cable	39
One-Touch Assemble	40
One-Touch Insert/Audio Dubbing	41
One-Touch Audio Mixing	42
Manual Copying	43
Manual Insert	44
Manual Audio Dubbing	45

Programme Editing

Programme Assemble	46
Programme Insert	48
Programme Audio Dubbing	50
Other Editing Functions	52

Helpful Hints

Edit Timing Adjustment	54
Tape Trade Editing	56
Glossary of Terms	57
On Screen Display Messages	59
Before Requesting Service	60
Flow Chart for On Screen Displays	62
Specifications	66

Cautions

Be sure to read the cautions carefully before you operate this VCR.

Avoid sudden changes in temperature

If the VCR is moved suddenly from a cold to a warm place, condensation may form on the tape surface and inside the VCR. If this happens, leave the VCR at room temperature for at least 1 hour before operating it.

Avoid humidity and dust

Do not use the VCR in very humid or dusty places. This may cause damage to its internal parts.

Do not cover the ventilation holes

The ventilation holes prevents excessive heat buildup inside the VCR during extended periods of use. Do not block these holes; especially avoid covering them with soft materials such as paper or cloth.

Keep the VCR away from high temperatures

Keep the VCR away from extreme heat such as direct sunlight, heating radiators, or closed automobiles.

Avoid magnets or magnetized objects

Never bring a magnet or magnetized object close to the VCR because this could adversely affect the performance of the VCR. When using the VCR together with other equipment, keep as much distance as possible between them to prevent them from adversely affecting each other's performance.

No fingers or other objects inside

Touching internal parts of the VCR is dangerous, and may seriously damage it. Do not attempt to disassemble the VCR. There are no user serviceable parts inside.

Keep water away

Keep the VCR away from flower vases, tubs, sinks, etc. **Caution:** If water or some other liquid is spilled into the VCR, serious damage could occur. If you spill any liquid into the VCR, consult qualified service personnel.

Lightning

To avoid damage by lightning, disconnect the AC mains lead from the VCR during lightning storms.

Cleaning the VCR

Wipe the VCR with a clean, dry cloth. Never use any cleaning fluid or other chemicals. Also do not use compressed air to remove dust.

Stacking

Install the VCR in a horizontal position and do not place anything heavy on it.

Video head clogging

The video heads record the picture signals on the tape during recording and read picture signals from the tape during playback. They are, therefore, of critical importance for the picture quality. If the VCR is used for a very long time, these heads may become dirty and clogged with dust and fine particles from the tape coating. In such a case, the signals can no longer be recorded correctly, and the playback picture will be distorted accordingly. This is the case, for example, if during the playback of a tape, which you know to have excellent recording quality, the picture and sound quality are inferior. When such a symptom occurs, have the recorder checked by qualified service personnel.

Head cleaning by a service center is not covered by warranty.

Condensation may form in the following cases:

- If the VCR is in a room that was very cold before the heater has just been turned on.
- If the VCR is in a room with steam or high humidity.
- If the VCR is brought from cold surroundings into a well-heated room.
- The VCR is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.

Note:

- In any of the above-mentioned conditions, do not operate the VCR for at least 1 hour.
This VCR is not equipped with a dew sensor.

Using the Mini-DV format Digital Video Head Cleaner:

1. Insert the Head Cleaner into the VCR in the same way as a video cassette.
2. Press ► **(PLAY)**, and after approximately 20 seconds press ■ **(STOP)**. (Do not rewind the tape.)
3. Take out the Head Cleaner. Insert a video cassette, perform recording and then play it back to check the picture.
4. If the picture is still not clear, repeat above operation steps 1-3. (Do not use the Head Cleaner more than 3 times in succession.)

Notes:



- Do not rewind the tape in the Head Cleaner after every use. Rewind it only after the tape has reached its end, and then use it again in the same way from the beginning.
- If the video heads again become clogged with dirt soon after cleaning, this might be caused by a damaged tape. In this case, stop using that cassette immediately.
- Be careful not to clean the video heads too much. (Too much cleaning could cause excessive wear to the video heads. If the video heads get worn, the picture is not played back clearly even after cleaning.)
- If using the Head Cleaner does not clear the video head clogging, the VCR requires cleaning or repairing by a service centre. Please consult with your dealer.
- This Video Head Cleaner is available from service centres.

Caution for AC Mains Lead (for U.K.)

For your safety please read the following text carefully

This appliance is supplied with a moulded three-pin mains plug for your safety and convenience. A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-amperes and it is approved by ASTA or BSI to BS 1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY. THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If in any doubt, please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:


Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol .

How to Replace the Fuse

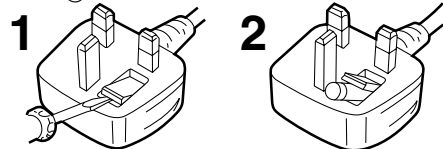
- There are two types of the AC mains lead assembly:

(A) and (B) as shown below.

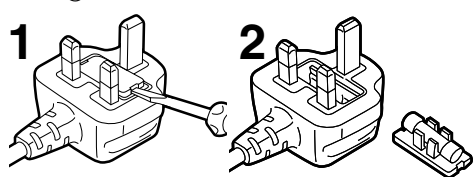
1 Open the fuse compartment with a screwdriver.

2 Replace the fuse and fuse cover.

TYPE (A)



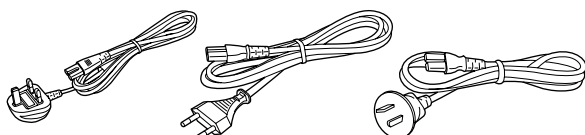
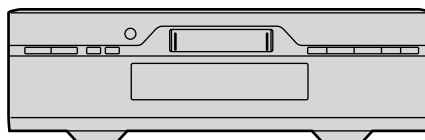
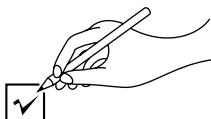
TYPE (B)



Check List

Before Use

Check that you have the accessories and items shown below.



1. VJA0733-C
VJA0940
VJA1022

2. VJA1039
VJA0664-1
VJA0664-1A
VJA1023

3. VJA0754
VJA1068

[See a leaflet.]



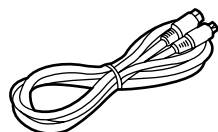
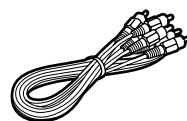
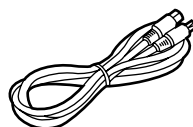
AC mains leads (3 pcs.)



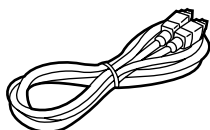
S-Video cable (1 pc.)
VJA0658-A or VJA0748



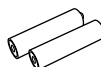
AV cables (1 pc.)
VJA0788, VJA1062,
VJA0788-B or VJA0788-D



Edit cable (1 pc.)
VJA1109 or VJA0787



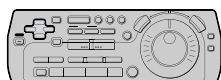
DV cable (1 pc.)
VJA1012



**Batteries for the Editing
Controller
(2 pcs.)**
R6 type



**Digital Video Head
Cleaner (1 pc.)**
VFK1451



**Editing Controller
(1 pc.)**
EUR571507



**AC Plug Adaptor
(1 pc.)**
VJP2974



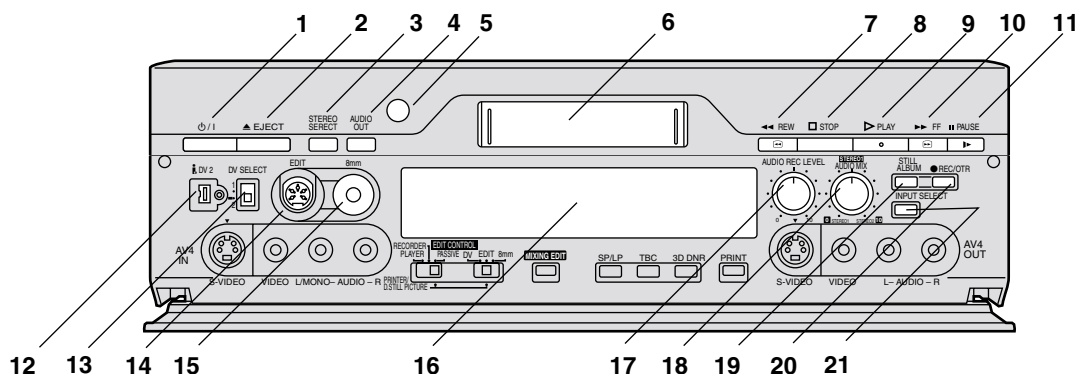
Guarantee Card
VQA0650-1
VQA0335
VQA0380



Operating Instructions
VQT8649 (English)
VQT8650 (German)
VQT8651 (French)
VQT8652 (Italian)
VQT8653 (Chinese)

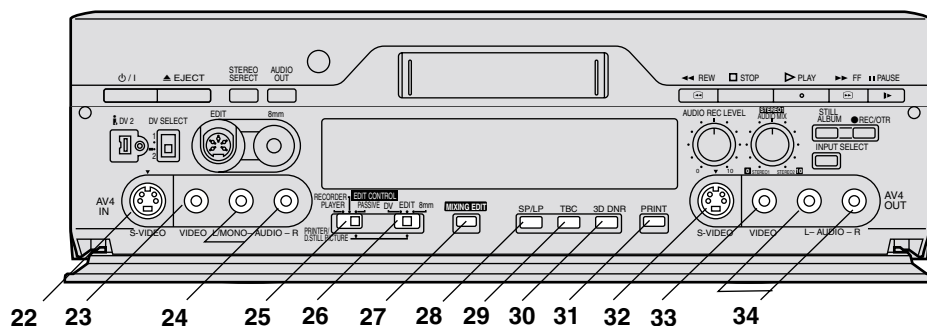
Controls and Connection Sockets

This section gives a detailed explanation of the function of each button, switch and connection socket.



Front

- | | |
|--|--|
| 1 VCR-ON/OFF button (⏻/I) [16] | 20 REC/OTR button (●) [16] |
| 2 EJECT button (▲) [12] | 21 INPUT SELECT button [27–35] |
| 3 STEREO SELECT button [17,41,42,45,51] | 22 S-Video Input socket [S-VIDEO IN (AV4)] [28,30,32,34] |
| 4 AUDIO OUT button [22] | 23 Video Input socket [VIDEO IN (AV4)] [28,30,32,34] |
| 5 Infra-red receiver window | 24 Audio Input socket [AUDIO IN (AV4)] [28,30,32,34] |
| 6 Cassette compartment | 25 Edit Mode switch [19,20,29–35] |
| 7 Rewind button (◀◀) [15] | 26 Edit Terminal switch [19,20,29–35] |
| 8 STOP button (□) [15,16] | 27 MIXING EDIT button [42] |
| 9 PLAY button (▶▶) [15] | 28 SP/LP button [16,27] |
| 10 Fast Forward button (▶▶▶) [15] | 29 Time Base Corrector button (TBC) [17] |
| 11 PAUSE/SLOW button (▶▶) [15,16] | 30 3 Dimensional Digital Noise Reduction button (3D DNR) [17] |
| 12 DV Input/Output socket [DV2 (i)] [28,30] | 31 PRINT button [19] |
| 13 DV SELECT (DV1/DV2) switch [29,31] | 32 S-Video Output socket [S-VIDEO OUT (AV4)] [19] |
| 14 EDIT socket [19,28,30,32] | 33 Video Output socket [VIDEO OUT (AV4)] |
| 15 8mm socket [34] | 34 Audio Output socket [AUDIO OUT (AV4)] |
| 16 Display | |
| 17 AUDIO REC LEVEL knob [17] | |
| 18 AUDIO MIX knob [17] | |
| 19 STILL ALBUM button [38] | |



Front (Explanation)

VCR-ON/OFF button (⏻/I)

Press to switch the VCR from on to standby mode or vice versa. In standby mode, the unit is still connected to the mains.

Edit Terminal switch

By connecting a video movie camera or VCR with an EDIT socket via an Edit cable, various kinds of editing functions can be performed more quickly and efficiently between two VCRs or between a VCR and a video movie camera.

DV Input/Output socket [DV1/DV2(Ⓜ)]

To connect the DV cable to digital video equipment with IEEE 1394-1995.

“Ⓜ” is the logo marked on products conforming with the “i.LINK” specifications. For further details on the DV terminal, refer to the Glossary of Terms on page 58.

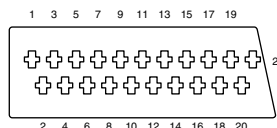
Edit Mode switch

- PLAYER:** When this VCR is used as the playback VCR during editing operations.
- RECORDER:** When this VCR is used as the recording VCR during editing operations.
- Normally set at this position.
- PASSIVE:** When operating this VCR using another VCR or an editing controller.

AV1 21-pin Scart socket [AV1 (TV)]

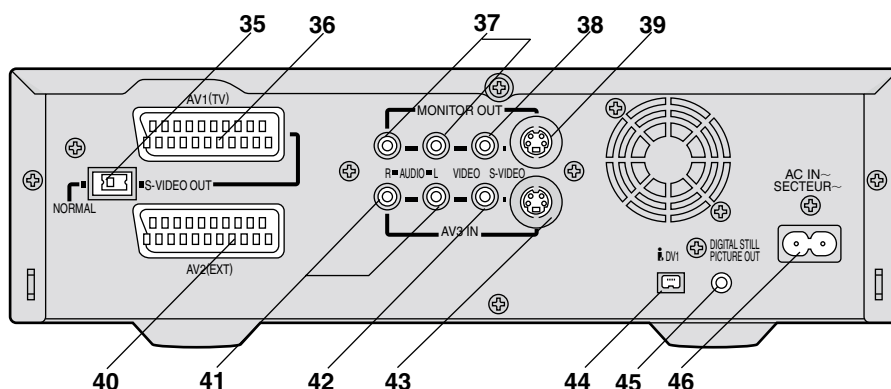
This 21-pin scart terminal carries input and output signals for both picture and sound. TV sets equipped with a similar socket can be connected here.

The scart terminal is also called “Peritel”, “Euro Connector” or “Euro AV”.



NORMAL (AV1/AV2)	S-VIDEO (AV1)
1 AUDIO OUTPUT CH2 (R)	1 AUDIO OUTPUT CH2 (R)
2 AUDIO INPUT CH2 (R)	2 AUDIO INPUT CH2 (R)
3 AUDIO OUTPUT CH1 (L)	3 AUDIO OUTPUT CH1 (L)
4 AUDIO GND	4 AUDIO GND
5 BLUE GND	5 No connection
6 AUDIO INPUT CH1 (L)	6 AUDIO INPUT CH1 (L)
7 BLUE	7 No connection
8 SWITCHING VOLTAGE	8 SWITCHING VOLTAGE
9 GREEN GND	9 No connection
10 Connection (Only when NV-DV2000 is off)	10 Connection
11 GREEN	11 No connection
12 No connection	12 No connection
13 RED GND	13 C OUT GND
14 BLANKING GND	14 No connection
15 RED	15 C OUT
16 BLANKING	16 No connection
17 VIDEO OUTPUT GND	17 Y OUT GND
18 VIDEO INPUT GND	18 VIDEO INPUT GND
19 VIDEO OUTPUT	19 Y OUT
20 VIDEO INPUT	20 VIDEO INPUT
21 GND	21 GND

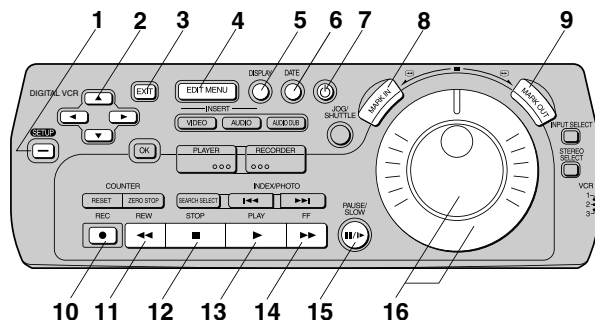
Caution: RGB reservation for only E/E operation when connecting the Pay TV decoder.



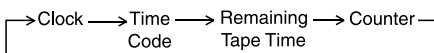
Rear

- 35** NORMAL/S-VIDEO OUT switch for AV1 only [Ⓜ13]
- 36** AV1 21-pin Scart socket [AV1 (TV)] [Ⓜ13,14]
- 37** Audio Monitor Output sockets [AUDIO OUT (AV3)] [Ⓜ13,14,30]
- 38** Video Monitor Output socket [VIDEO OUT (AV3)] [Ⓜ13,30]
- 39** S-Video Output socket [S-VIDEO OUT] [Ⓜ13,19]
- 40** AV2 21-pin Scart socket [AV2 (EXT)] [Ⓜ14]
- 41** Audio Input sockets [AUDIO IN (AV3)]
- 42** Video Input socket [VIDEO IN (AV3)]
- 43** S-Video Input socket [S-VIDEO IN (AV3)]
- 44** DV Input/Output socket [DV1(Ⓜ)]
- 45** DIGITAL STILL PICTURE OUT socket [Ⓜ20]
- 46** AC Input socket (AC IN) [Ⓜ13]

Editing Controller



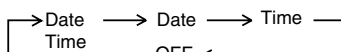
- 1 **SET UP** button
To make the **SET UP** screen appear on the TV screen. When the **SET UP** screen is displayed, use this button to return to the previous screen.
- 2 **CURSOR** button (▲▼◀▶)
To make selections from the **SET UP** or **EDIT MENU** screen. (When the **SET UP** or **EDIT MENU** screen is displayed.)
- 3 **EXIT** button
To exit the **SET UP** or **EDIT MENU** screen.
- 4 **EDIT MENU** button
To make the **EDIT MENU** screen appear on the TV screen, and to return to the previous screen. This button is also used to stop editing functions using the **EDIT MENU** screen.
- 5 **DISPLAY** button [⏏16]
To change the VCR display indication as follows:



Note:

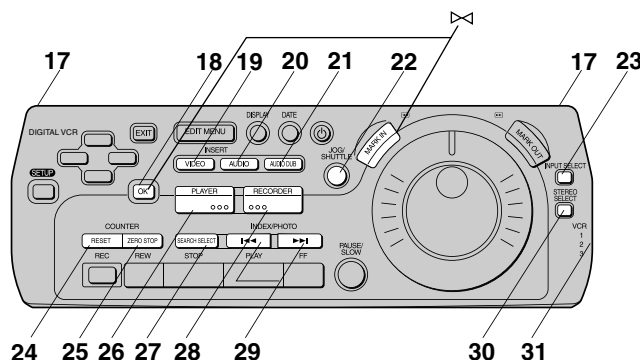
The VCR display cannot be switched between the Time code display and the tape counter display while editing is in progress.

- 6 **DATE** button
When pictures are recorded using the NV-DV2000 or a Panasonic Digital Video Camera, the date and time of the recording are automatically recorded onto the tape's sub code track. This button is used to select the information to be displayed on the On Screen Display.



- 7 **VCR-ON/OFF** button (⏻) [⏏16]
- 8 **MARK IN** button [⏏46–51]
To set edit start points for Programme Editing.
- 9 **MARK OUT** button [⏏46–51]
To set edit end points for Programme Editing.

- 10 **REC** button (●) [⏏16,39,40]
To start recording.
- 11 **Rewind** button (◀◀) [⏏15]
In the stop mode: To rewind the tape.
In the playback mode: To search backward for a scene.
In the rewind mode: To view the video. "◀◀" is lit during rewind.
- 12 **STOP** button (■) [⏏15,16]
To stop playback or recording.
- 13 **PLAY** button (▶) [⏏15]
To start playback. "▶" is lit during playback.
- 14 **Fast Forward** button (▶▶) [⏏15]
In the stop mode: To fast forward the tape.
In the playback mode: To search forward for a scene.
In the fast forward mode: To view the video. "▶▶" is lit during fast forward.
- 15 **PAUSE/SLOW** button (||/▶) [⏏15]
During playback:
 - When pressed once: Still picture. "||" is lit.
 - When pressed for 2 seconds or more: Slow playback. "||/▶" is lit.
 During recording: To pause recording.
- 16 **Jog Dial/Shuttle Ring** [⏏15,39–51]
Jog Dial (inner dial):
 Operate after pressing **JOG/SHUTTLE** to switch to the Jog/shuttle mode.
 To locate any desired field with utmost precision.
Shuttle Ring (outer ring):
 Operate after pressing **JOG/SHUTTLE** to switch to the Jog/shuttle mode.
 To adjust playback speed backward or forward.



17 Infra-red Transmitter window

18 OK button

To start Manual editing and to store the selection on the SET UP or EDIT MENU screen.

19 VIDEO INSERT button [F39,41]

For the Video Insert function and the AV Insert function.

20 AUDIO INSERT button [F39,41]

For the Audio Insert function and the AV Insert function.

21 AUDIO DUB button [F39,41,42]

For the Audio Dubbing function or the Audio Mixing function.

22 JOG/SHUTTLE button and lamp [F15,39–51]

To switch to the Jog/Shuttle mode. When the button is pressed, it lights and the VCR enters the Jog/Shuttle mode.

In the stop mode: Still picture (Jog/Shuttle mode).

During playback: Still picture (Jog/Shuttle mode).

23 INPUT SELECT button [F27–35]

To select the A1, A2, A3, A4 or DV IN (DV1 or DV2) external recording source.

24 COUNTER RESET button [F18]

To reset the tape counter (elapsed time) to "0:00.00".

- The tape counter is automatically reset to "0:00.00". when a video cassette is inserted.
- It is not possible to reset the Time code to "0h00m00s00f" using **COUNTER RESET**.

25 COUNTER ZERO STOP button [F18]

To use the zero stop function at the tape counter display.

26 PLAYER button [F43–51]

To operate this VCR as the playback unit for editing.

27 SEARCH SELECT button [F18]

To search for a recorded programme using the index/photoshot index search.

28 RECORDER button [F43–51]

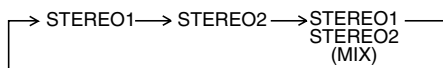
To operate this VCR as the recording unit for editing.

29 INDEX/PHOTO buttons [F18]

For the index/photoshot index search function.

30 STEREO SELECT button [F17,41,42,45,51]

To select the audio track (STEREO1 audio and/or STEREO2 audio) on a tape which was recorded in the 12bit audio mode. During playback, each time the button is pressed, the sound changes as follows:



- The audio track cannot be selected during the playback of a tape recorded in the 16bit audio mode.
- When **INPUT SELECT** is set to DV1 or DV2, the audio track can be selected by **STEREO SELECT** at any time: it does not have to be during playback.

31 VCR1/2/3 switch

Set the switch on the side panel of the editing controller to the appropriate position when more than two or three Panasonic VCRs is being used.

- VCR1: Select this position on both the VCR and editing controller for normal use with one VCR.
- VCR2: Select this position when using two Panasonic VCRs.
- VCR3: Select this position when using three Panasonic VCRs.

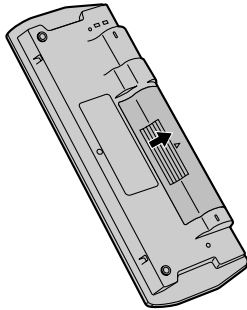
Child Lock buttons [F12]

To set the child lock function when you keep pressing **OK** and **MARK IN** for more than five seconds.

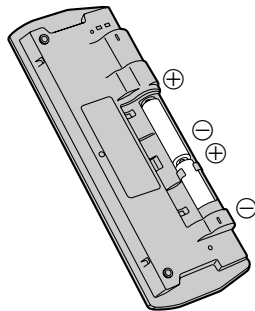
Editing Controller Setup

Installing the Batteries

- 1 To remove the cover, slide it in the direction of the arrow while pressing down.



- 2 Load the batteries with their polarity (\oplus and \ominus) aligned correctly.



- 3 Slide the cover back on.

Power Source for the Editing Controller

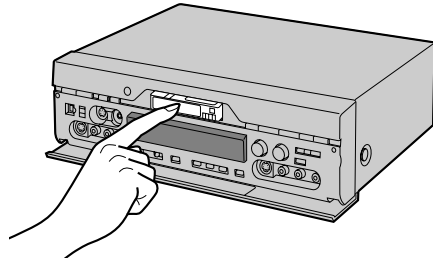
The editing controller is powered by 2 AA, UM3 or R6 size batteries. The life of the batteries is about one year, although this depends on the frequency of use.

Precautions for Battery Replacement

- Load the new batteries with their polarity (\oplus and \ominus) aligned correctly.
- Do not apply heat to the batteries, or an internal short-circuit may occur.
- If you do not intend to use the editing controller for a long period of time, remove the batteries and store them in a cool, dry place.
- Remove spent batteries immediately and dispose of them.
- Do not use an old and a new battery together, and never use an alkaline battery with a manganese battery.
- Do not use rechargeable batteries.

Inserting the Cassette/Child Lock Function

Be sure to insert the cassette with the window side facing upwards until it is taken into the VCR. Press **EJECT** and remove the cassette from the video unit.

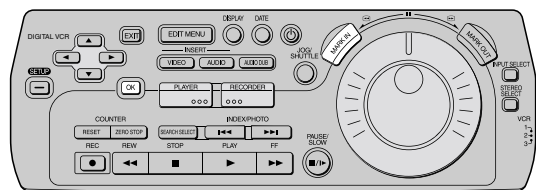


Child Lock Function

When you do not want other people to operate the VCR. Holding down **OK** and **MARK IN** until “ \times ” and “hold” appears more than 5 seconds in the VCR display will deactivate all buttons. Any external commands will not be processed by the VCR.

To cancel this function, repeat the same procedure until “ \times ” and “hold” disappears.

- If a button is pressed while the Child Lock function is on, “ \times ” and “hold” appears in the VCR display.
- When the power is disconnected, the Child Lock function is automatically cancelled after backup time.



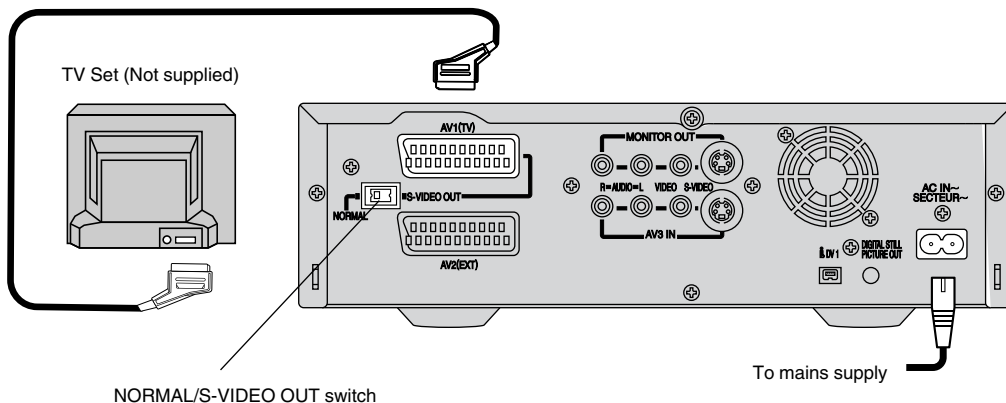
Connections Using a 21-pin Scart Cable/ Connections Using an S-Video Cable

Connections Using a 21-Pin Scart Cable

The VCR send signals to the TV via a 21-pin scart cable (not supplied).

Perform the connections shown in the figure below.

Set **NORMAL/S-VIDEO OUT** to the **S-VIDEO OUT** when connecting the VCR to a TV set equipped with a 21-pin Euro-AV Connector with pins for separate Y/C signal input.

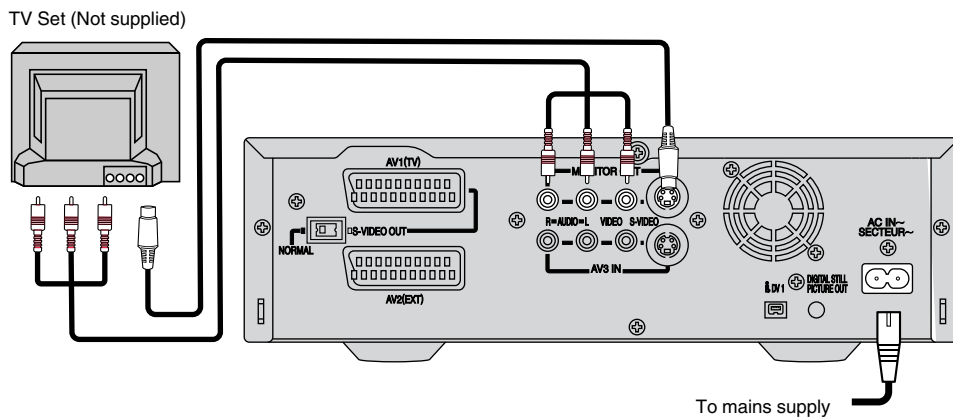


Connections Using an S-Video Cable

The VCR send signals to the TV via an S-Video cable (supplied).

Perform the connections shown in the figure below.

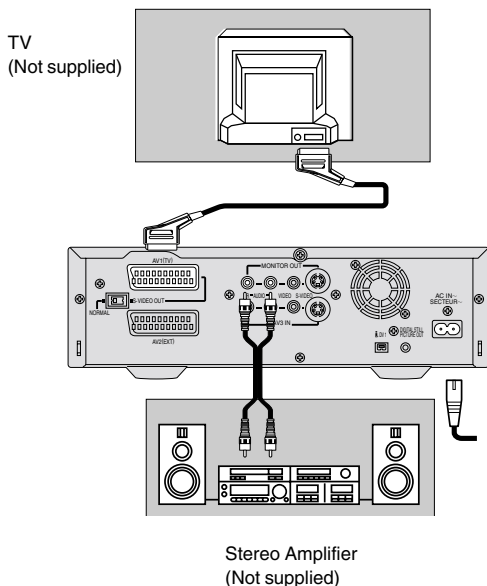
Separate Y/C signals can be obtained using the S-Video cable.



Connection to a Stereo Amplifier/ Connection to a Decoder

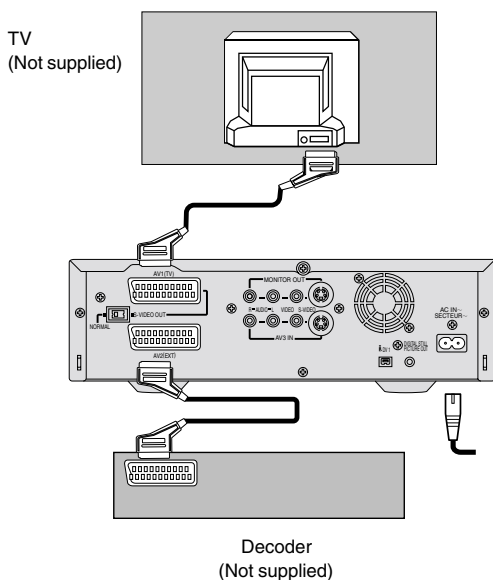
Connection to a Stereo Amplifier

In addition to the connections described on the previous page, connect the MONITOR OUT (AV3 OUT) sockets to the Amplifier using an AV cable.



Connection to a Decoder

In addition to the connections described on the previous page, connect the AV2 socket to the decoder using a 21-pin Scart cable.



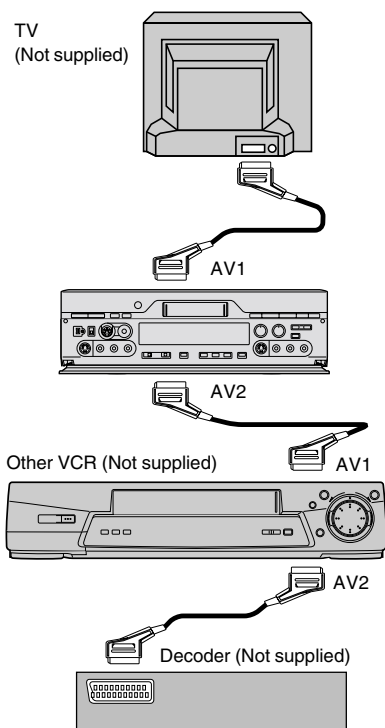
Note:

- If the TV set is provided with an RGB-compatible connector, connect the 21-pin Scart cable from the VCR to this connector. Use the fully-wired 21-pin Scart cable for connecting the TV set and VCR and for connecting the VCR and decoder.

Connections for the “Q Link” Function of the other TV, VCR and Decoder

The NV-DV2000 does not have the “Q Link” function, but the connections below link the NV-DV2000 to a TV, a VCR with tuner and a decoder so that the “Q Link” function may work.

We recommend this connection for advanced users.



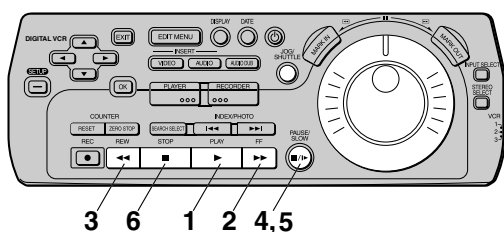
Hint:

Turn off the NV-DV2000 so that the “Q Link”, “DATA LOGIC”, “NEXTVIEWLINK”, “Easy Link”, “Megalogic”, “SMART LINK” or other logo functions of other TV, VCR and decoder may work.

The following “Q Link”, “DATA LOGIC”, “NEXTVIEWLINK”, “Easy Link”, “Megalogic” or “SMART LINK” functions are available.

- Preset Download
- Direct TV REC
- TV/VCR Auto Power On

Playback



Preparation

- Insert a recorded cassette tape. [C12]



Operations

- 1 Press **▶ (PLAY)** to start playback.



- 2 Press **▶▶ (FAST FORWARD)** for cue playback.



- Press **▶ (PLAY)** to change back to normal playback.

- 3 Press **◀◀ (REWIND)** for review playback.



- Press **▶ (PLAY)** to change back to normal playback.

- 4 Press **⏸ (PAUSE/SLOW)** to view a still picture.



- Press **▶ (PLAY)** or **⏸ (PAUSE/SLOW)** to continue normal playback.

- 5 Keep **⏸ (PAUSE/SLOW)** pressed for 2 seconds or more to view a slow motion picture.



- Press **▶ (PLAY)** to continue normal playback.

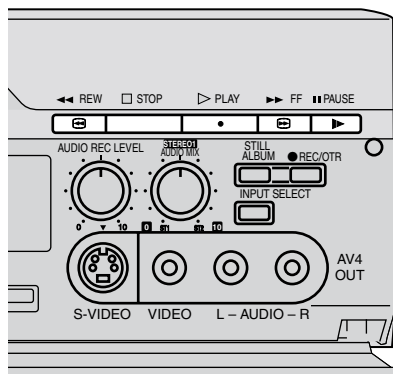
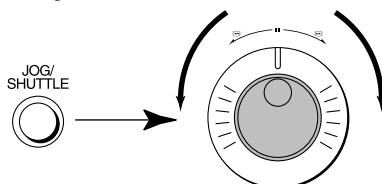
- 6 Press **■ (STOP)** to stop the picture.

To Change the Playback Speed

- ① Press **JOG/SHUTTLE** on the Editing controller.

- The button on the editing controller is lit.

- ② Rotate Shuttle Ring.

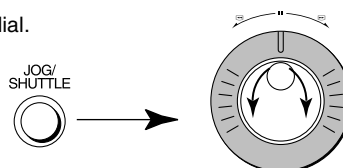


To Locate the Desired Picture Exactly

- ① Press **JOG/SHUTTLE** on the Editing controller.

- The button on the editing controller is lit.

- ② Turn Jog dial.



To View the Video During Fast Forward or Rewind

Keep **▶▶ (FAST FORWARD)** pressed during fast forward.

Keep **◀◀ (REWIND)** pressed during rewind.

Convenient Automatic Functions

Automatic Playback

When a cassette with the opened record prevention tab is inserted, the VCR starts playback automatically.

VCR-off Playback

When the VCR is off, an inserted cassette can be played back by pressing **▶ (PLAY)**.

Automatic Rewinding

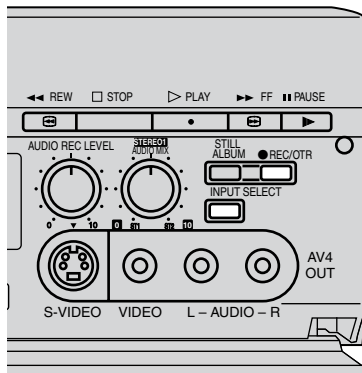
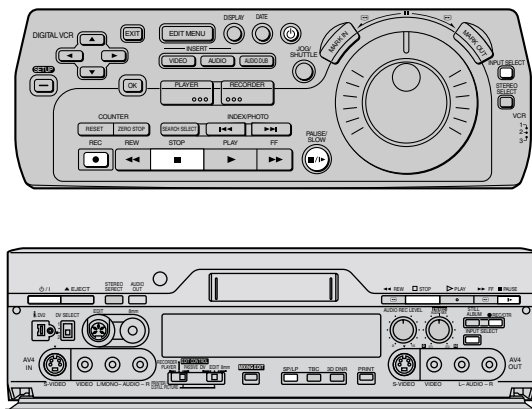
When the tape reaches the end during recording or playback, it will automatically be rewound to the beginning.

- During OTR, this function will not work.

Notes:

- If you keep **▶▶ (FAST FORWARD)** or **◀◀ (REWIND)** pressed in step 2 or 3, search playback is activated while the button is pressed, and operation returns to normal playback when the button is released.
- Cue, review or slow playback will be automatically cancelled after 10 minutes, and still playback after 5 minutes.
- When using the Editing controller for remote control: In order to conserve battery power, **JOG/SHUTTLE** turns off after 30 seconds.

Recording



Preparations

- Insert a video cassette with the closed record prevention tab.
- If it has already been inserted, press **VCR-ON/OFF** ϕ/I to turn the VCR on.
- Press **INPUT SELECT** to select A1-A4.
Press **INPUT SELECT** so that **DV1** or **DV2** after sliding **DV SELECT** to 1 or 2, is selected.



Operations

- 1 Press **● (REC)** or **● (REC/OTR)** to start recording.
- 2 Press **■ (STOP)** to stop recording.



To Select the Desired Tape Speed

Press **SP/LP** before recording.



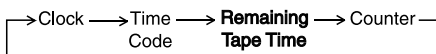
To Pause Recording

Press **II/III> (PAUSE/SLOW)** during recording.
Press it again to continue recording.



To Display the Remaining Tape Time

Press **DISPLAY** repeatedly until the Remaining Tape Time appears on the VCR display.



- The remaining tape time may not be displayed correctly for some tapes.

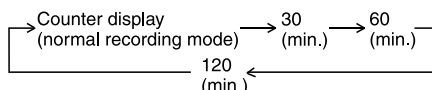
Notes:

- The tape speed during fast forward, rewind and index search is automatically regulated according to the remaining amount of tape. In these cases, the tape counter and the time code display may stop temporarily.
- Recording pause will be automatically cancelled after 5 minutes.

One-Touch Recording (OTR)

This function only works using **REC/OTR** on the VCR main unit.

After you start recording, you can use this function to stop recording automatically when the selected recording duration is finished (useful for recording when you are out). Simply set the recording duration by pressing **● (REC/OTR)** repeatedly.
The duration indicated on the VCR display changes by pressing **● (REC/OTR)** as follows:



Preparation

Insert a video cassette with the closed record prevention tab.

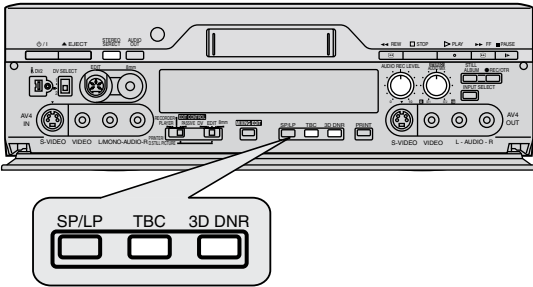
Operations

- 1 Set the video source which is to be recorded, and start recording.
- 2 Press **● (REC/OTR)** repeatedly to select the desired recording duration.
 - The VCR will automatically switch off when OTR is completed. To turn the VCR on again, press **VCR-ON/OFF** ϕ/I .

Notes:

- When the tape reaches the end during OTR, the VCR will turn itself off.
- To stop OTR at any time, press **■ (STOP)** or **VCR-ON/OFF** ϕ/I .

Other Playback and Recording Functions



3D DNR Functions

3D DNR is the 3-Dimensional Digital Noise Reduction Function. [C58]

To Ensure High Playback Picture Quality (PB 3D DNR Function)

To set the 3D DNR mode for playback, proceed as follows.

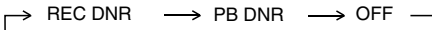
- Press the **3D DNR** button before or during **playback** to activate the **PB 3D DNR** function, so that the “**PB DNR**” indication appears on the VCR display.
- We recommend that you leave this function activated for normal use of the VCR.
- When you play back a tape that was recorded with **REC DNR** function on, set “**PB DNR**” to off.
- See [C24] to set the level of “**PB 3D DNR**” function.
- In the initial settings, “**PB DNR**” is “on”
- If afterimage occurs, turn “**PB DNR**” off.

To Record in the High Picture Quality (REC 3D DNR Function)

To set the 3D DNR mode for recording, proceed as follows.

- Press the **3D DNR** button **before recording**. The “**REC DNR**” indication appears on the VCR display.
- When you cannot ensure high playback picture quality, press the **3D DNR** button to cancel the “**REC DNR**” function, so that the “**REC DNR**” indication is turned off.
- Press the **INPUT SELECT** button to select A1–A4.

Each time the **3D DNR** button is pressed, the indication changes on the VCR display as follows.



To Ensure a Stable and Shake-Free Recording Picture (TBC)

(For Recording Only) [C57]

TBC stands for Time Base Corrector.

When the tape movement is unstable during recording, the playback picture may shake from side to side and the picture may become distorted.

Activating the Time Base Corrector in a case like this stabilize the picture and reduces the shaking.

- Press the **TBC** button **before recording** to activate “**TBC**” function so that the “**TBC**” indication appears on the VCR display.
- We recommend that you leave this function activated for normal use of the VCR.
- When you cannot ensure high playback picture quality, press the **TBC** button to cancel “**TBC**” function so that the “**TBC**” indication is turned off.
- Only when A1–A4 is selected by pressing the **INPUT SELECT** button, “**TBC**” function will be elected. This function has an effect only for tapes on which analogue signals from A1-A4 have been recorded. However, on the TV screen, you cannot confirm the effect of this function during recording.
- In the initial settings, “**TBC**” is “ON.”

To Manually Adjust the Audio Recording Level

Under normal circumstances, this VCR adjusts the recording level to prevent sound distortion due to peaks. However, if you want to manually adjust the audio recording level or if sound distortion appears when you confirm the audio output, perform the operation steps below before you start the actual recording. Adjust the recording sound with the **AUDIO REC LEVEL** knob.

- Press the knob once so that it pops out. (To close the front door, press the knob into the VCR.)
- Turn the knob so that the audio level indication on the VCR display is not “OVER”.



- This function has an effect only for tapes on which analogue signals from A1-A4 have been recorded. You cannot adjust the audio level from DV input. (However, you can adjust the audio level by connecting to the external input socket.)

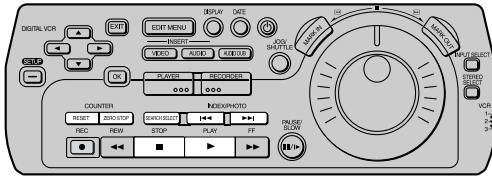
To Change the Audio Mix Sound Balance

Select “Mix sound” during playback in the 12 bit audio mode, then turn the **AUDIO MIX** knob to adjust the balance.

- Press the knob once so that it pops out. (To close the front door, press the knob into the VCR.)
- Turn the knob to the left to increase the “ST1” sound, or to the right to increase the “ST2” sound. The audio track cannot be selected during the playback of a tape recorded in the 16 bit audio mode.
- Use the **STEREO SELECT** button to select the audio, and then adjust the balance.



Search Functions



Index Search System

It is easy to find the beginning of each recording because a special index signal is recorded at the start of each recorded segment on the tape.

For example:

Searching for the 2nd recorded segment in the forward direction.

- 1 Press **SEARCH SELECT** so that "—" appears on the VCR display.
(This operation is performed while the VCR is in the stop mode or normal playback mode.)
- 2 Press **INDEX/PHOTO** **▶▶▶** twice.
 - Normal playback now commences.



To stop the operation at any time
Press **■ (STOP)**.

- After finding the specific recorded segment, playback starts automatically.
- For the reverse direction, press **INDEX/PHOTO** **◀◀◀**.
- Up to 20 index signals can be searched for in either direction.
- When the opposite **INDEX/PHOTO** is pressed, the number shall be decreased until 1 is reached.
- The figure on the display is reduced by 1 each time an index signal is located.
- The index search function can only work correctly if the index signals are spaced at least 5 minutes apart.
- Repeat the procedure if the index signal for the specified number is not found.

Recording Index Signals

Index signals are recorded in the following cases.

- When a recording is started by pressing **● (REC/OTR)**.
- When **● (REC)** on the editing controller is pressed during recording.

Photoshot Index Search System

Photoshot index signals are automatically recorded when a Panasonic Digital Video Camera is used for photo shot shooting. Photo shot images are searched using these signals, and when such an image is located, the image is played back as a still picture.

For example:

Searching for the 2nd photo shot image in the forward direction.

- 1 Press **SEARCH SELECT** so that "P —" appears on the VCR display.
- 2 Press **INDEX/PHOTO** **▶▶▶** twice.
 - The image to be viewed will be found.



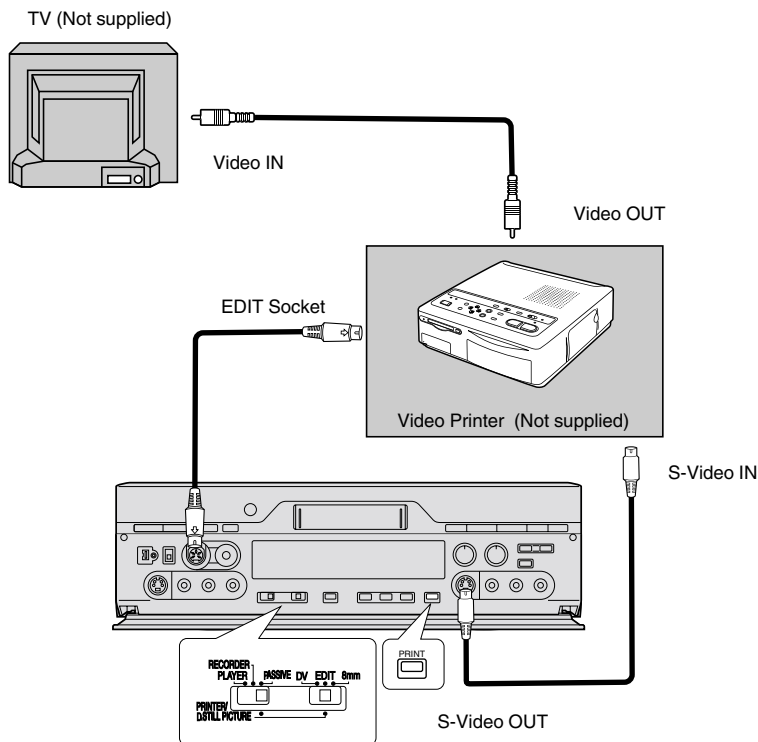
- For the reverse direction, press **INDEX/PHOTO** **◀◀◀**.
- Any of up to 20 images ahead on the tape can be designated.
- It may not be possible to search for a particular image properly if photo shot images have been recorded continuously.
- At every press of the corresponding button, the tape is fast-forwarded or rewound to the next still picture recorded in the Photoshot Mode.
- During playback, after reaching the still picture, the still picture is played back continually together with the sound (only for approx. 4 seconds).

To return to a specified scene (zero stop function)

- 1 Press **RESET** to set the counter to 0:00.00.
- 2 After playback, press **ZERO STOP** in the stop mode.
 - The tape will be rewound or fast forwarded to 0:00.00 approximately.
 - During Time code display, this function will not work.

Using the VCR with a Video Printer

Still pictures can easily be printed out when the VCR is connected to a Panasonic video printer equipped with an EDIT socket.



Preparation

- Connect a Video Printer to this VCR as shown.

Video Printer:

- 1 Turn the Video Printer on.
- 2 Perform the necessary settings on the Video Printer according to the input signal.

VCR:

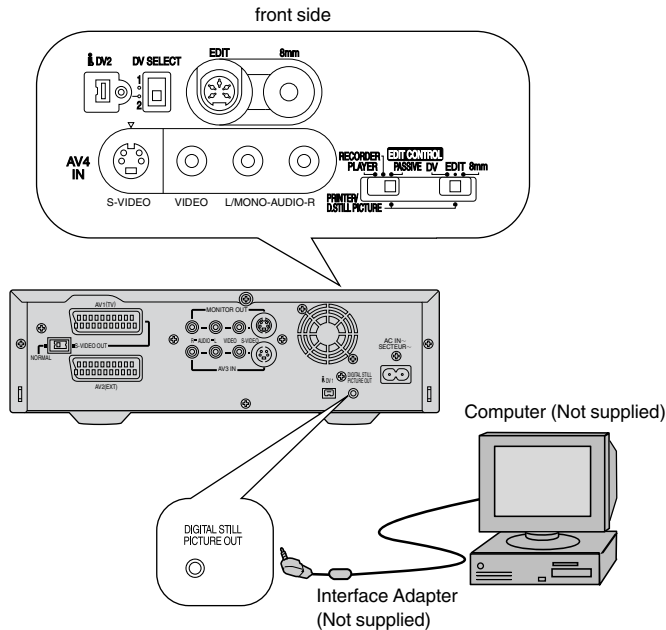
- 3 Turn the VCR on.
- 4 Set **Edit Terminal** to **EDIT**, and **Edit Mode** to **PASSIVE**.
- 5 Press **▶ (PLAY)**.
- 6 Search for the picture from which you want to print, and then press **II/▶ (PAUSE/SLOW)**.
- 7 Press **PRINT**.

Notes:

- Read the Operating Instructions of the Video Printer.
- The **OSD** and **DATE** display are also printed out. If a picture without these displays is required, proceed as follows.
 - Set **OSD** on the **VCR functions** to **OFF**.
 - Press **DATE** on the editing controller.
- Printing cannot be stopped at any point in time until it is completed.
- For printing, screens cannot be divided and the zoom function cannot be used.

Using the VCR with a Computer

The Personal Computer Connection Kit VW-DTA9/10E (Optional) for Digital Video Equipment performs it possible to connect the VCR to a computer and transmit still video images to it.



Computer System Requirements

DV STUDIO can be installed in a PC/AT personal computer which can run Microsoft® Windows® 95/98.

- Compatible machines:** Personal computer with 80486DX4 or higher CPU (Pentium™ or higher recommended)
- Graphic card:** True Color (approx. 16.7million colours) recommended (operation also possible even with 256 colours)
- Installed memory:** 16 MB or more (32 MB or more recommended)
- Free hard disk space:** At least 16 MB
- Disk drive:** CD-ROM drive
- Serial port:** RS-232C (D-Sub 9pin) or USB
- Other requirements:** Mouse

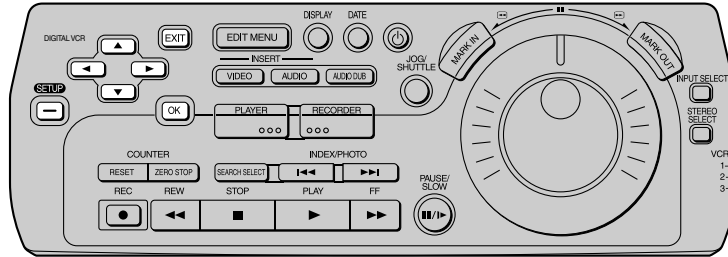
To connect the VCR to the computer, use the special Interface Adaptor contained in the Personal Computer Connection Kit.

- To use the DV STUDIO 2 software via USB, a computer with Windows® 98 preinstalled is necessary.
- Pictures that you intend to import into a computer application should be recorded in the SP mode.
- When recording, take care that the Time Code is uninterrupted from the beginning of the tape.
- For detailed of explanations on the operating environment, connections and operations, refer to the Personal Computer Connection Kit's operating instructions.
- Windows® 95/98 is a trademark of Microsoft Corporation U.S.A.
- Pentium™ is a trademark of Intel Corporation.
- All other company and product names in the operating instructions are trademarks of their respective corporations.

Notes:

- If you use a DV cable to connect the VCR with a computer and they do not function, contact the software manufacturer.
- Connect the DV cable to the socket that matches the number of the **DV SELECT** that was selected. There is one **DV Input/Output** socket on the front of the unit, and one on the back.

Clock Setting/Shipping Condition



To set the clock

The built-in clock must be set to the correct time.
The built-in digital clock employs the 24-hour system.
The clock backup system operates for at least 60 minutes in the event of power failure.

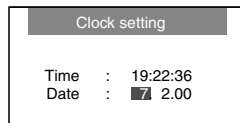
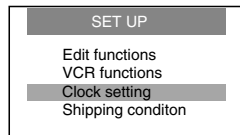
Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Turn on the VCR.

Operations

- 1 Press **SET UP**, and then press **▲▼ (CURSOR)** to select **Clock setting** and press **OK**.
- 2 Press **▲▼◀▶ (CURSOR)** to set **Time** and **Date**.
- 3 Press **OK** to confirm.
- 4 Press **EXIT**.

On Screen Display

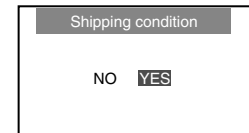
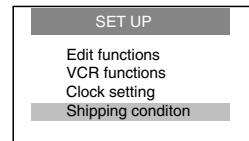


To Initialise VCR Functions and Edit Functions

If you want to return the VCR to the factory-preset condition, follow the procedure below.

Operations

- 1 Press **SET UP**, and then press **▲▼ (CURSOR)** to select **Shipping condition** and press **OK**.
- 2 Press **◀▶ (CURSOR)** to select **YES**.
- 3 Press **OK** to confirm.
- 4 Press **EXIT**.

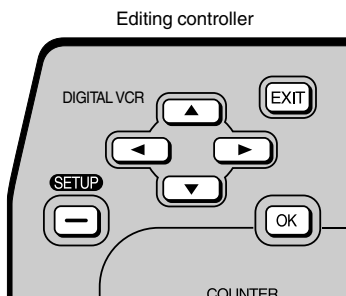


Note:

- If you perform Shipping Condition, the clock setting is not initialised.

Settings for VCR Functions

The VCR indications shown on the TV screen are known as the **On Screen Display (OSD)**.
This VCR allows many settings to be made at the OSD.
See [36] for setting for Edit functions.



Preparation

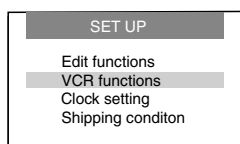
- Turn on the VCR and TV.

OSD

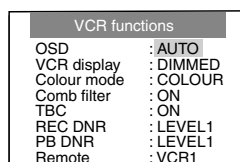
Operations

- 1 Press **SET UP**, and then press **▲▼ (CURSOR)** to select **VCR functions** and press **OK**.

On Screen Display



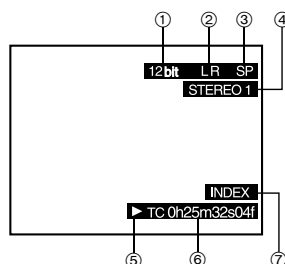
- 2 Press **▲▼▶ (CURSOR)** to select **OSD**.



- 3 Press **▲▼ (CURSOR)** to select **AUTO, ON** or **OFF**, and then press **OK**.
AUTO: The On Screen Display will appear on the TV screen for a few seconds when you operate the VCR.
ON: The On Screen Display will always appear on the TV screen when you perform the VCR.
OFF: The On Screen Display will not appear. (except for Recorded Date and Time)

- 4 Press **EXIT** to exit the On Screen Display.

To use the On Screen Display:



① Audio Data Indicator

② Audio Output Mode Indicator

The Left (L) and Right (R) Indicators show which sound mode is selected with **AUDIO OUT**.
Stereo: Both the L and R Indicators appear.
Left: The L Indicator appears.
Right: The R Indicator appears.

③ Tape speed Indicator

④ Audio Monitor Indicator

ST1: 12bit STEREO1 sound
ST2: 12bit STEREO2 sound
MIX: STEREO1 and STEREO2 mixed sound.
Picture

⑤ Tape running display

Stop	■
Rewind	◀◀
Fast Forward	▶▶
Playback	▶
Reverse Playback	◀
Reverse Slow Playback	◀
Slow Playback	▶
Still Playback, Pause	
Recording	●

⑥ Present time/Time code/Remaining tape time/Tape counter/Index/Photoshot Index Search/One-Touch Recording (OTR)

Present time	17:24:31
Time code	TC 0h25m32s04f
Remaining tape time	REMAIN: 1:04
Tape counter	- 1:35:47
Index/Photoshot index Search	▶▶ 02
One-Touch Recording (OTR)	OTR 60

⑦ Index/Photoshot Index Search Indicator

Notes:

- When the item **OSD** is set to **OFF**, the On Screen Display will not appear.
- On Screen Display is not displayed when the **SET UP** or **EDIT MENU** screen is displayed.
- On Screen Display (④) is not displayed while playing a tape that was recorded in 16bit audio mode.
- When a wide-display TV is used as a monitor, parts of the On Screen Display may not be visible depending on the type of signal (16:9, PAL Plus) received.

VCR display

Operations

- 1 Press **SET UP**, and then press **▲▼ (CURSOR)** to select **VCR functions** and press **OK**.
- 2 Press **▲▼▶ (CURSOR)** to select **VCR display**.

VCR functions	
OSD	: AUTO
VCR display	: DIMMED
Colour mode	: COLOUR
Comb filter	: ON
TBC	: ON
REC DNR	: LEVEL1
PB DNR	: LEVEL1
Remote	: VCR1
- 3 Press **▲▼ (CURSOR)** to select **ON**, **OFF** or **DIMMED**, and then press **OK**.

ON: When VCR is turned off, the characters are lit in the VCR display.

OFF: When VCR is turned off, the characters are not lit in the VCR display.

DIMMED: When VCR is turned off, the characters are dimmed in the VCR display.
- 4 Press **EXIT** to exit the On Screen Display.

To Set the Colour mode

Operations

- 1 Press **SET UP**, and then press **▲▼ (CURSOR)** to select **VCR functions** and press **OK**.
- 2 Press **▲▼▶ (CURSOR)** to select **Colour mode**.

VCR functions	
OSD	: AUTO
VCR display	: DIMMED
Colour mode	: COLOUR
Comb filter	: ON
TBC	: ON
REC DNR	: LEVEL1
PB DNR	: LEVEL1
Remote	: VCR1
- 3 Press **▲▼ (CURSOR)** to select **COLOUR** or **B/W**, and then press **OK**.

COLOUR: When performing playback in colour.

B/W: When performing playback in black and white.
- 4 Press **EXIT** to exit the On Screen Display.

Comb filter

Operations

- 1 Press **SET UP**, and then press **▲▼ (CURSOR)** to select **VCR functions** and press **OK**.
- 2 Press **▲▼▶ (CURSOR)** to select **Comb filter**.

VCR functions	
OSD	: AUTO
VCR display	: DIMMED
Colour mode	: COLOUR
Comb filter	: ON
TBC	: ON
REC DNR	: LEVEL1
PB DNR	: LEVEL1
Remote	: VCR1
- 3 Press **▲▼ (CURSOR)** to select **ON** or **OFF**, and then press **OK**.

ON: Set to increase detail. Normally set to this position.

OFF: Set to reduce picture noise.
- 4 Press **EXIT** to exit the On Screen Display.

Setting for TBC Function

(For Recording only)

Operations

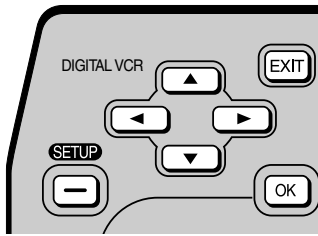
- 1 Press **SET UP**, and then press **▲▼ (CURSOR)** to select **VCR functions** and press **OK**.
 - 2 Press **▲▼▶ (CURSOR)** to select **TBC**.

VCR functions	
OSD	: AUTO
VCR display	: DIMMED
Colour mode	: COLOUR
Comb filter	: ON
TBC	: ON
REC DNR	: LEVEL1
PB DNR	: LEVEL1
Remote	: VCR1
 - 3 Press **▲▼ (CURSOR)** to select **ON** or **OFF**, and then press **OK**.

ON: When recording analogue VCR the shaking and distortion of the pictures are reduced during playback.

OFF: When the horizontal lines appear during playback of the edited picture even if **TBC** is set to **ON**, set to **OFF**.
 - 4 Press **EXIT** to exit the On Screen Display.
- Alternatively, you can press the **TBC** button of the VCR and set for the **TBC** function. [17]

Editing controller



Settings for 3D DNR (REC DNR/PB DNR) Function

For Recording Operations

- 1 Press **SET UP** and press **▲▼ (CURSOR)** to select **VCR functions** and press **OK**.

SET UP
Edit functions
VCR functions
Clock setting
Shipping condition

- 2 Press **▲▼▶ (CURSOR)** to select **REC DNR**.

VCR functions
OSD : AUTO
VCR display : DIMMED
Colour mode : COLOUR
Comb filter : ON
TBC : ON
REC DNR : LEVEL1
PB DNR : LEVEL1
Remote : VCR1

- 3 Press **▲▼ (CURSOR)** to select **LEVEL1** or **LEVEL2** and press **OK**.
LEVEL1: To ensure 3D DNR effect
LEVEL2: To ensure high 3D DNR effect
- 4 Press **EXIT** to exit the On Screen Display.

- After setting the **3D DNR** function, **press the 3D DNR button until the "REC DNR" indication appears on the display before recording** to ensure high picture quality.

For Playback Operations

- 1 Press **SET UP** and press **▲▼ (CURSOR)** to select **VCR functions** and press **OK**.

- 2 Press **▲▼▶ (CURSOR)** to select **PB DNR**.

VCR functions
OSD : AUTO
VCR display : DIMMED
Colour mode : COLOUR
Comb filter : ON
TBC : ON
REC DNR : LEVEL1
PB DNR : LEVEL1
Remote : VCR1

- 3 Press **▲▼ (CURSOR)** to select **LEVEL1** or **LEVEL2** and press **OK**.
LEVEL1: To ensure 3D DNR effect
LEVEL2: To ensure high 3D DNR effect

- 4 Press **EXIT** to exit the On Screen Display.

- After setting the **3D DNR** function, **press the 3D DNR button until the "PB DNR" indication appears on display before or during playback** to ensure high picture quality.

To Set the Remote mode Operations

- 1 Press **SET UP**, and then press **▲▼ (CURSOR)** to select **VCR functions** and press **OK**.

- 2 Press **▲▼▶ (CURSOR)** to select **Remote**.

VCR functions
OSD : AUTO
VCR display : DIMMED
Colour mode : COLOUR
Comb filter : ON
TBC : ON
REC DNR : LEVEL1
PB DNR : LEVEL1
Remote : VCR1

- 3 Press **▲▼ (CURSOR)** to select **VCR1, VCR2** or **VCR3** and press **OK**.

This allows the Editing controller to be set for operating VCR1, VCR2 or VCR3.

- After changing the remote mode, slide the **VCR 1/2/3** switch to change the remote mode of the Editing controller. If this is not done, it will not be possible to operate the VCR using the Editing controller. [C11]

- 4 Press **EXIT** to exit the On Screen Display.

Editing Functions

Using this VCR, 4 types of **One-Touch-Edit**, 3 types of **Manual Editing** and 3 types of **Programme Editing** can be selected.

In Programme Editing, after setting the edit start/end point, editing can be performed automatically. Edit programmes can be set up to 10 scenes for each editing function (20 scenes for Assemble editing).

Programme editing with Time Code enables high edit accuracy, typically within 5 frames at the edit start point (1 frame=1/25th of a second).

The accuracy of the edit start/end point on the playback VCR will vary depending on the VCR/Movie Camera being used. Use the Edit Timing Adjustment function to give the best possible accuracy.

One-Touch-Edit

- Assemble Editing [F40]
- Insert Editing (Video, Audio, AV) [F41]
- Audio Dubbing [F41]
- Audio Mixing [F42]

Manual Editing

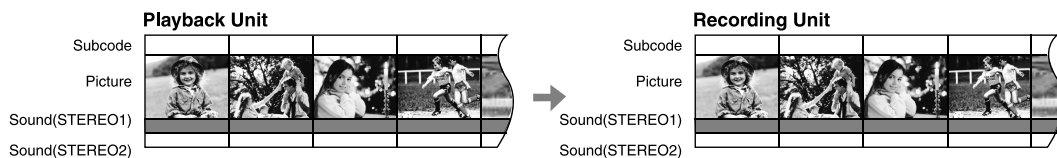
- Copying [F43]
- Insert Editing (Video, Audio, AV) [F44]
- Audio Dubbing [F45]

Programme Editing

- Assemble Editing [F46]
- Insert Editing (Video, Audio, AV) [F48]
- Audio Dubbing [F50]

Copying

Allows the re-recording (copying) of the picture and sound from one tape onto another tape.



Performing the Copying operation on a tape that was recorded in 12bit audio mode.

Video Insert

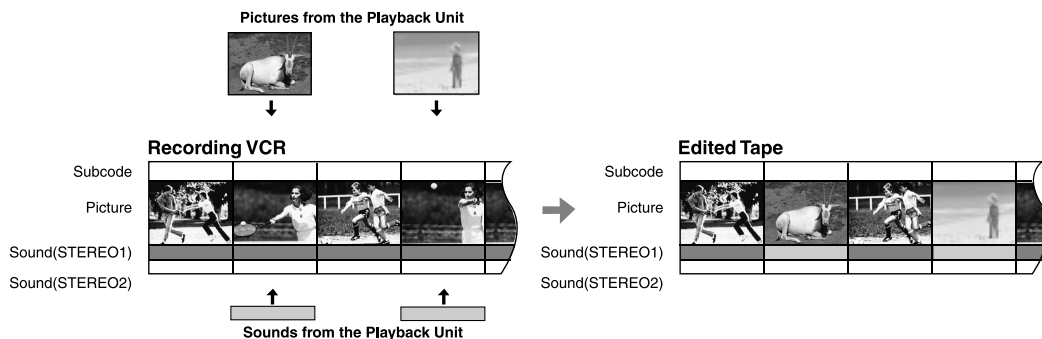
Allows the partial replacement of the picture on a recorded tape. Sound is left in its original state.

Audio Insert

Allows the partial replacement of sound on a recorded tape. Picture is left in its original state.

AV Insert

Allows the partial replacement of the picture and sound on a recorded tape.

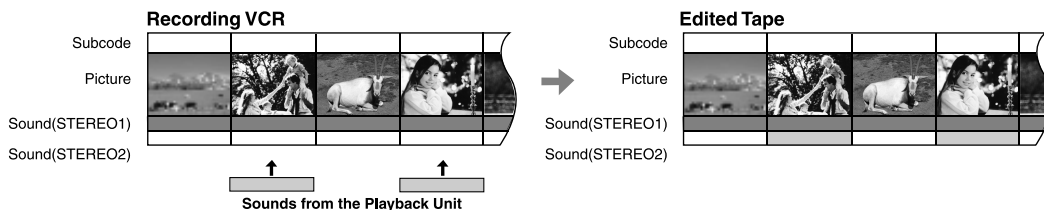


Performing the AV Insert editing operation on a tape that was recorded in 12bit audio mode.

Editing Functions (continued)

Audio Dubbing

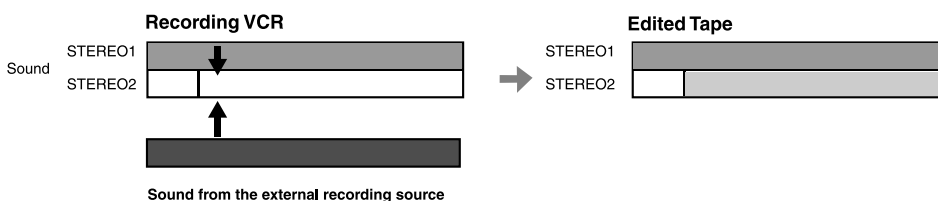
Allows the addition of the new sound on the STEREO2 track of a recorded tape. The original sound is left on the STEREO1 track.



Performing the Audio Dubbing operation on a tape that was recorded in 12bit audio mode.

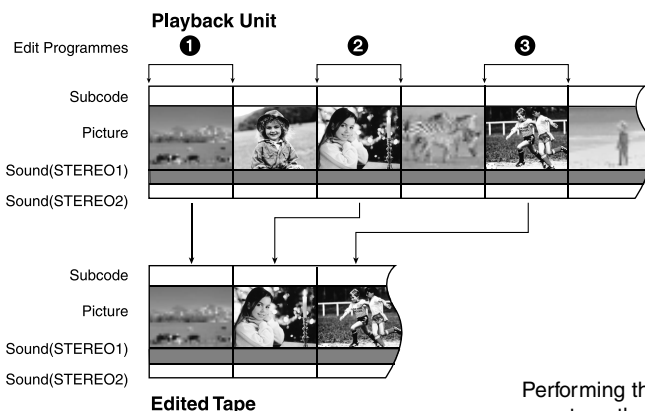
Audio Mixing

Allows the mixing of the original sound on the STEREO1 track with the new sound from the external recording source and recording the mixed sound on the STEREO2 track of a recorded tape. The original sound is left on the STEREO1 track.



Assemble Editing

Allows the required scenes (picture and sound) to be picked up from a recorded tape and recorded in any desired order onto another tape.



Performing the Programme Assemble editing operation on a tape that was recorded in 12bit audio mode.

Creating the Tapes for Editing

In order to operate editing functions correctly, use these tapes for editing as follows:

- **Tape on which the picture and sound have been recorded properly for about 20 seconds prior to the edit start point:** [Playback unit] [Recording unit]
This VCR first rewinds the tape to the section prior to the edit start point and then commences editing. For this reason, accurate editing cannot be performed if the tape has been left blank or if the picture and sound have not been recorded properly for 20 seconds prior to the edit start point.
- **Tape on which the Time code has been recorded continuously:** [Playback unit] [Recording unit]
If the recording is broken up or if the tape is blank in places, the Time code will lack continuity, and editing will be aborted.
- **Tape which was recorded in SP mode:** [Recording unit]
(This applies to **Insert**, **Audio Dubbing** and **Audio Mixing** only.)
The above types of editing operations cannot be performed on a tape which was recorded in the **LP** mode.
- **Tape which was recorded in the 12bit audio mode:** [Recording unit]
(This applies to **AV Insert**, **Audio Dubbing** and **Audio Mixing** editing only.)
The above types of editing operations cannot be performed on a tape which was recorded in the 16bit audio mode.

When a tape which was recorded on another video recorder is used for Insert, Audio Dubbing or Audio Mixing editing operations, the sound may deteriorate and the picture may be disturbed.

If tapes answering to the above description are not available, proceed with dubbing by following the steps below to create the tapes for editing.

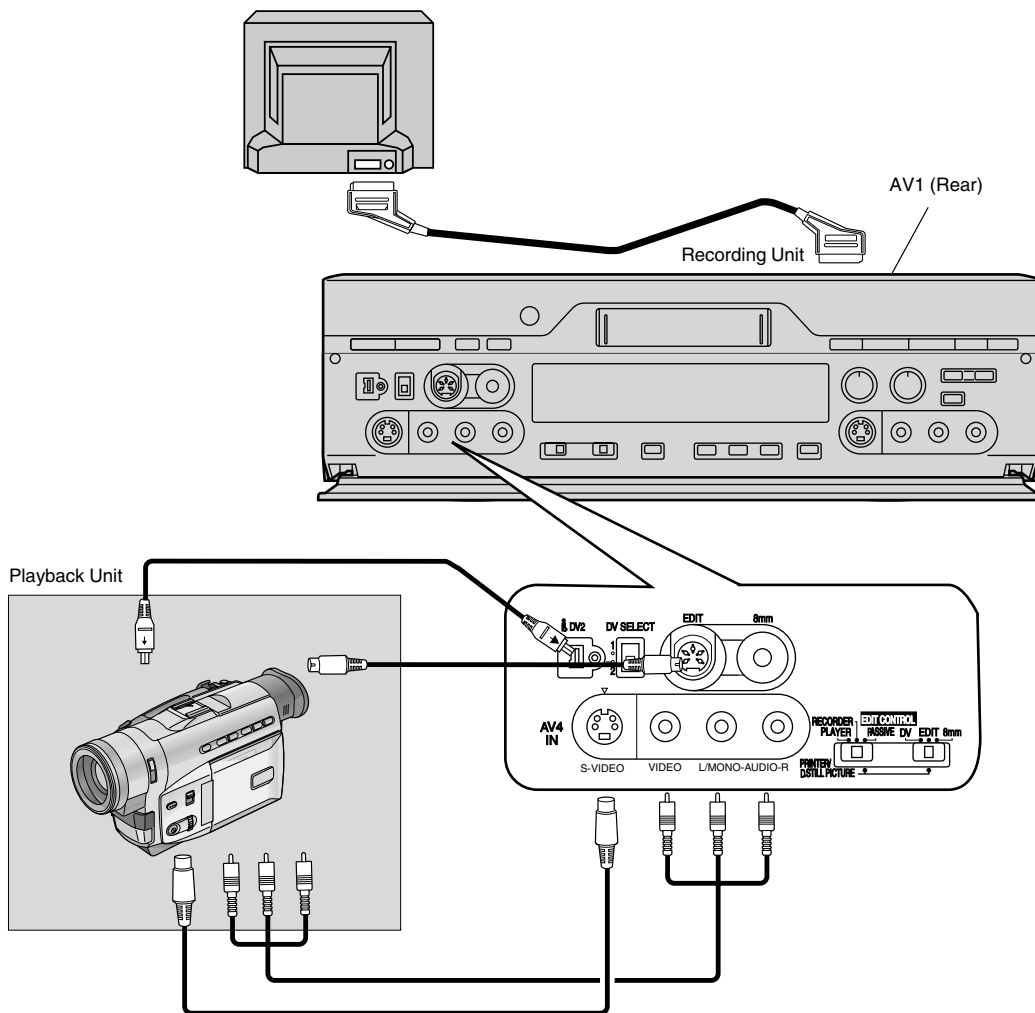
- 1 Load the original cassette tape into the playback unit and the new cassette tape into the recording VCR (the NV-DV2000).
- 2 Connect the playback unit and recording VCR (the NV-DV2000).
For the connection, use the **DV** cable when the contents of the original cassette are to be copied using their original digital signals, and use the **AV** cables when the contents are to be copied using the signals from the video and audio sockets.
(To dub a 16bit audio tape and make a 12bit audio tape, connect the units using the **AV** cables, and proceed with the dubbing.)
- 3 Set the VCR's tape speed to **SP**.
- 4 Record a blank picture for about 20 seconds.
Set the playback unit to the stop mode, set **INPUT SELECT** on the recording VCR (the NV-DV2000) to **A2**, **A3** or **A4**, and start recording.
- 5 Switch over the input of the recording VCR (the NV-DV2000).
If the **DV** cable was used for the connection in step 2, select "**DV1**" or "**DV2**"; if the **AV** cable was used, switch over to **A1**, **A2**, **A3** or **A4**.
- 6 Press **▶ (PLAY)** on the playback unit to start playing the original tape.
- 7 Press **● (REC)** on the recording VCR (the NV-DV2000) to start dubbing.

Notes:

- Digital copying using a **DV** cable yields a picture quality which undergoes hardly any deterioration at all.
- If a digital video tape is dubbed without connecting the **DV** cable, the original sub code data (Photoshot index signals, date information, etc.) will not be copied.
- The Time code is simultaneously recorded over the subcode of the tape when the tape is recorded. Also recorded in the sub code are the photoshot index signals, information on the recording date, etc. For further details on the Time code, see [58].

Connecting with a Panasonic Digital Video Camera

Example for connecting Panasonic NV-DS25 Digital Video Camera as the playback unit, when controlling the playback unit through the NV-DV2000.



Notes:

- Before connecting any cables, first make sure that the power for both units is off.
- Insert a recorded cassette into the playback unit, and a cassette with the closed record prevention tab into the VCR.
- If the playback unit is connected to the recording unit via an **S-VIDEO** cable, the video signal on the **S-VIDEO** cable takes priority. If the playback unit does not have an **S-VIDEO** socket, do not connect the **S-VIDEO** cable to the NV-DV2000.
- Use of an AC adaptor as the power source for the Digital Video Camera is recommended. Doing so avoids a situation where the camera shuts down due to low battery power.
- It is recommended that the **DV** cable be disconnected for editing with **INPUT SELECT** set to **A1-A4**. If **INPUT SELECT** is set to A1-A4 with the connections shown in the figure left unchanged, the TV picture may be disturbed or noise may occur. (This has no effect on the actual editing operations.)
- When the units are connected using the **DV** cable and editing is performed, some editing functions will differ compared with when the units are connected using the **AV** cables. Refer to Glossary of Terms on [58].
- Read the operating instructions of the Digital Video movie Camera.
- Do not change the **Edit Terminal** or **Edit Mode** settings while performing setting or editing operations at the **SET UP** or **EDIT MENU** screens. Be sure to quit these screens before changing these settings.

Playback Unit (Digital Video Camera)

- 1 Turn on the DVC.
- 2 Make the Time code appear on the LCD monitor or the viewfinder.
- 3 Prepare the tape for playback.

Recording Unit (the NV-DV2000)

- 1 Turn on the VCR.
- 2 Set **Edit Mode** to **RECORDER**.
- 3 Set **Edit Terminal** to **EDIT**.
- 4 Press **INPUT SELECT** so that **DV1** or **DV2** after sliding **DV SELECT** switch 1 or 2, is selected.
 - When performing **Audio Dubbing** or **AV Insert**, select A2, A3 or A4.

Notes:

- When using a Panasonic Digital Video Camera as the playback unit, the following editing functions can be used by connecting the camera to the NV-DV2000 with just a DV cable:

Copying (See page 43 after seeing page 25.)

Video Insert (See pages 44 and 48 after seeing page 25.)

Audio Insert (See pages 44 and 48 after seeing page 25.)

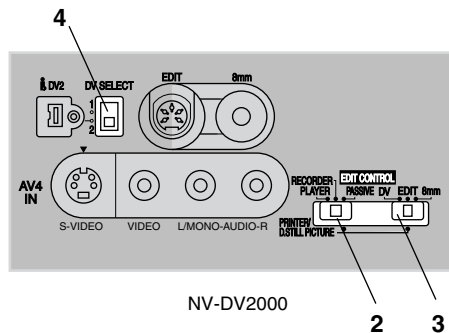
Assemble (See pages 40 and 46 after seeing page 26.)

except **Audio Dubbing**, **Audio Mixing** and **AV Insert**

In this case, simply set **INPUT SELECT** to **DV1** or **DV2**, and set **Edit Terminal** to **DV**.

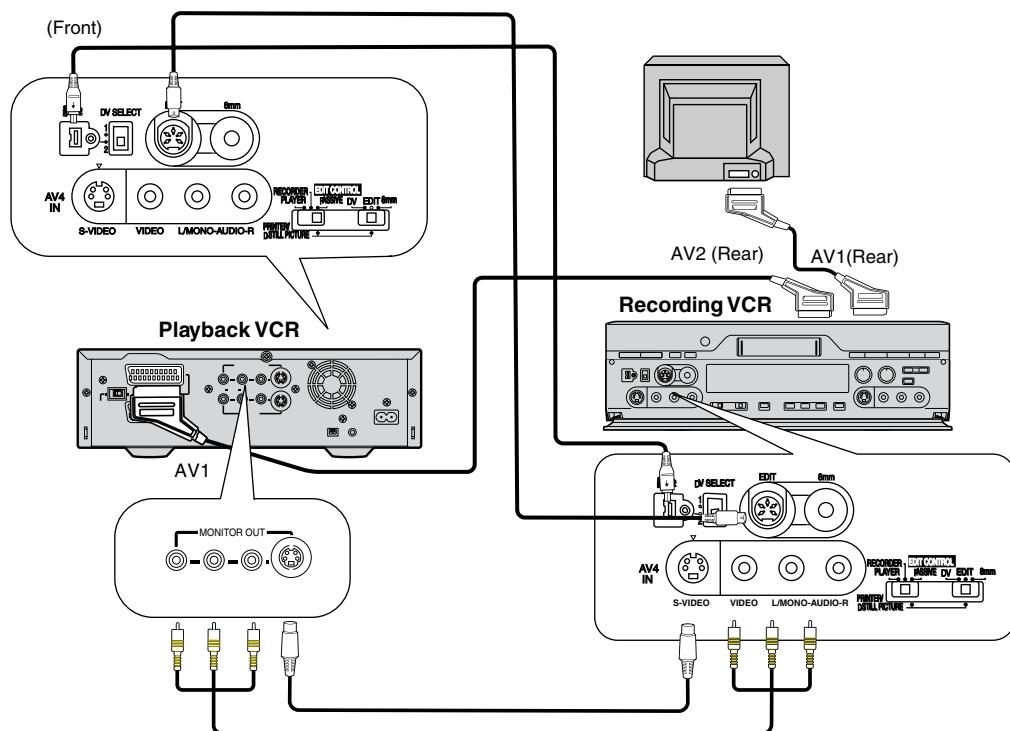
(This function may not operate properly with some models.)

- Use Time codes for Programme Editing when the playback unit is connected to the NV-DV2000 via only a **DV** cable.
- Select the **DV SELECT** switch setting in accordance with the connected socket.



Connecting Two Digital Video Cassette Recorders (Both Panasonic models)

Example for connecting two NV-DV2000, when controlling the playback VCR through the recording VCR. Refer to the diagram below and connect the cables required for the desired editing function.



Notes:

- Before connecting any cables, first make sure that the power for both VCRs is off.
- Insert a recorded cassette into the playback VCR, and a cassette with the closed record prevention tab into the VCR.
- When the units are connected using the DV cable and editing is performed, some editing functions will differ compared with when the units are connected using the AV cable. Refer to Glossary of Terms on [C-58].
- Use Time codes for programme editing when the playback VCR is connected to the NV-DV2000 via only a DV cable.
- It is recommended that the DV cable be disconnected for editing with INPUT SELECT set to A1-A4. If INPUT SELECT is set to A1-A4 with the connections shown in the figure left unchanged, the TV picture may be disturbed or noise may occur. (This has no effect on the actual editing operations.)
- If one of either the 21-pin scart cable or the AV cables is connected, it is not necessary to connect the other. If both cables are connected, electronic noise may be generated when the playback VCR and the recording VCR are in stop mode. Although this noise will not have any effect on the actual editing operations, if it does become annoying, set INPUT SELECT on the playback VCR to a position for which no cable is connected.
- When the connections and setting are made as shown above, then:
 - The ► (PLAY), ►► (FAST FORWARD), ● (REC/OTR), and the other such buttons on the playback VCR or the Editing controller cannot be used to control the playback VCR directly.
 - Do not change Edit Terminal or Edit Mode settings while performing setting or editing operations at SET UP or EDIT MENU screens. Be sure to quit these screens before changing these settings.

Playback VCR

- 1 Turn on the VCR.
- 2 Set **Edit Mode** to **PASSIVE**.
- 3 Set **Edit Terminal** to **EDIT**.
(Set **DV SELECT** to 1 or 2.)

Recording VCR

- 1 Turn on the VCR.
- 2 Set **Edit Mode** to **RECORDER**.
- 3 Set **Edit Terminal** to **EDIT**.
- 4 Press **INPUT SELECT** so that **DV1** or **DV2** after sliding **DV SELECT** to 1 or 2, is selected.
 - When performing **Audio Dubbing** or **AV Insert**, select A2, A3 or A4.

Note:

The following editing functions can be used by connecting the playback VCR with just a **DV** cable:

- Copying** (See page 43 after seeing page 25.)
 - Video Insert** (See pages 44 and 48 after seeing page 25.)
 - Audio Insert** (See pages 44 and 48 after seeing page 25.)
 - Assemble** (See pages 40 and 46 after seeing page 26.)
- except **Audio Dubbing**, **Audio Mixing** and **AV Insert**

In this case, simply set **INPUT SELECT** to **DV1** or **DV2**, and set **Edit Terminal** to **DV**.

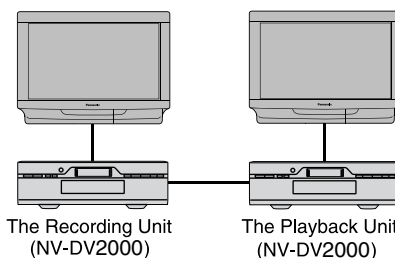
Controlling the Recording VCR through the Playback VCR

Follow the procedure described below:

- Connect the edit cable to the **EDIT** socket on both the playback VCR and the recording VCR.
- Use 21-pin Scart cable or **AV** cables to connect the input sockets on the recording VCR with the output sockets on the playback VCR.
- Connect two TVs, one to each of the VCRs, so that the screens from both VCRs can both be seen.
- Set **Edit Terminal** on both the playback VCR and the recording VCR to **EDIT**.
- Press **INPUT SELECT** on the playback VCR and select a position to which a cable is not connected.
- Set **Edit Mode** on both VCRs as follows:
Playback VCR : **PLAYER**
Recording VCR : **PASSIVE**

Notes:

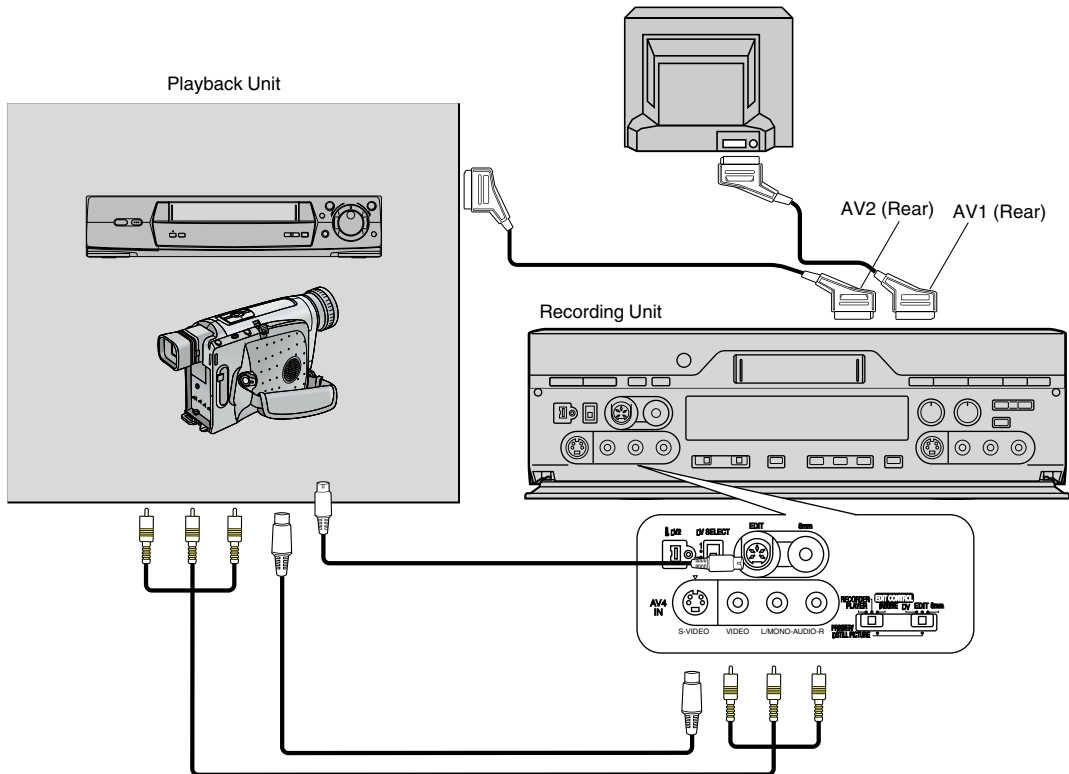
- When this connection is made, the recording VCR cannot be controlled using the **DV** cable.
- Although noise may appear on the screen, depending on the connections, the noise has no effect on the actual editing operations.
- When connecting only with **DV** cable, **Audio Insert** and **AV Insert** are not possible.
- When performing editing with this connection, the editing accuracy may be worse than when controlled from the recording VCR.



Connecting an S-VHS (VHS) Video Equipment with an Edit Socket

Example for connecting an S-VHS (VHS) video equipment with an Edit socket as the playback unit, when controlling the playback unit through the recording VCR (this unit).

Refer to the diagram below and connect the cables required for the desired editing function.



Notes:

- Before connecting any cables, first make sure that the both units turn off.
- Insert a recorded cassette into the playback unit, and a cassette with the closed record prevention tab into the VCR.
- If the playback unit is connected to the recording unit via an **S-VIDEO** cable, the video signal on the **S-VIDEO** cable takes priority. If the playback unit does not have an **S-VIDEO** socket, do not connect the **S-VIDEO** cable to the NV-DV2000.
- If one of either the 21-pin Scart cable or the **AV** cables is connected, it is not necessary to connect the other.
If both cables are connected, electronic noise may be generated when the playback VCR and the recording VCR are in stop mode. Although this noise will not have any effect on the actual editing operations, if it does become annoying, set **INPUT SELECT** on the playback VCR to a position for which no cable is connected.
- Read the operating instructions of the playback unit.
- Do not change the **Edit Terminal** or **Edit Mode** settings while performing setting or editing operations at **SET UP** or **EDIT MENU** screens. Be sure to quit these screens before changing these settings.
- When using this VCR as the recording VCR and performing editing by connecting the units via the **AV** cables or a 21-pin Scart cable, the On Screen Display (date/time, Time Code) may scroll vertically when still playback or slow playback are performed by the playback VCR.

Playback Unit [S-VHS (VHS) Video Equipment with an Edit socket]

- 1 Turn on the Video Equipment.
- 2 Set the unit so that it is ready to be controlled.
 - Read the operating instructions of the playback unit and make the necessary settings.

Recording VCR (the NV-DV2000)

- 1 Turn on the VCR.
- 2 Set **Edit Mode** to **RECORDER**.
- 3 Set **Edit Terminal** to **EDIT**.
- 4 Press **INPUT SELECT** so that A2, A3 or A4 is selected.

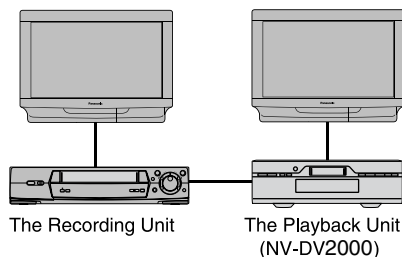
Hint:

When the “**TBC**” and “**REC 3D DNR**” functions activate, you can record with the clear pictures. [C 17,23,24]

Connecting the NV-DV2000 as the Playback VCR to an S-VHS (VHS) VCR

Follow the procedure described below.

- Use **AV** cables to connect the output sockets on the NV-DV2000 with the input sockets on the S-VHS (VHS) VCR.
- Press **INPUT SELECT** on the NV-DV2000 so that A2, A3 or A4 is selected.
- Connect two TVs, one to the NV-DV2000 and one to the S-VHS (VHS) VCR, so that the screens from both VCRs can both be seen.
- Set **Edit Mode** on the NV-DV2000 to **PLAYER**.
- Make the necessary editing control settings for the S-VHS (VHS) VCR. Read the operating instructions of S-VHS (VHS) VCR.

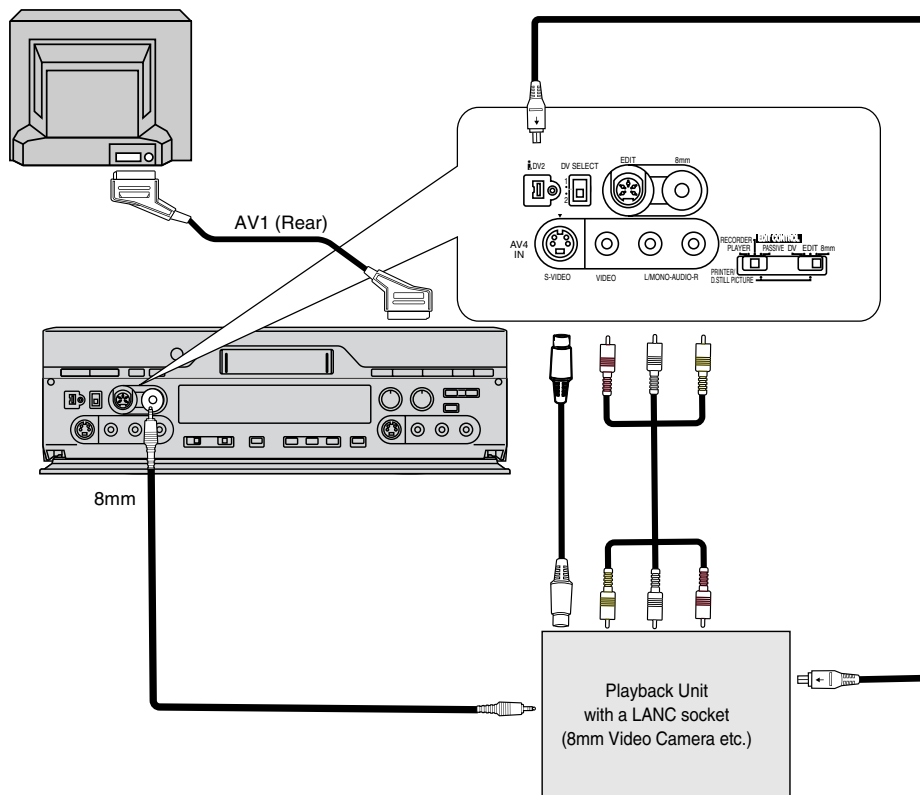


Note:

Audio Insert and **AV Insert** are not possible in this configuration.

Connecting a Video Equipment with a LANC Socket

Example for connecting another manufacturer's video equipment with a LANC terminal (L control) as the playback unit, when controlling the playback unit through the VCR.



Notes:

- Do not change the **Edit Terminal** or **Edit Mode** settings while performing setting or editing operations on the **SET UP** or **EDIT MENU** screens. Be sure to exit these screens before changing these settings.
- When using this VCR as the recording VCR and performing editing by connecting the units via the AV cables or a 21-pin Scart cable, the On Screen Display (date/time, Time Code) may scroll vertically when still playback or slow playback are performed by the playback VCR.
- Before connecting any cables, first make sure that the both units turn off.
- Insert a recorded cassette into the playback unit, and a cassette with the closed record prevention tab into the VCR.
- The NV-DV2000 cannot be controlled through video equipment with a LANC socket.
- Some types of LANC sockets have a different shape to the LANC socket on the NV-DV2000.
- If an attempt is made to perform an operation through the NV-DV2000 that the playback unit does not support, the unit may operate incorrectly.
- If the playback unit is connected to the recording unit via an **S-VIDEO** cable, the video signal on the **S-VIDEO** cable takes priority. If the playback unit does not have an **S-VIDEO** socket, do not connect the **S-VIDEO** cable to the NV-DV2000.
- When the units are connected using the **DV** cable and editing is performed, some editing functions will differ compared with when the units are connected using the **AV** cables. Refer to Glossary of Terms on [58].
- Read the operating instructions of the playback unit.

Playback Unit (a Video Equipment with a LANC socket)

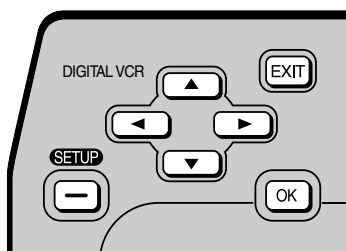
- 1 Turn on the Video Equipment.
- 2 Set the unit so that it is ready to be controlled.
 - Read the operating instructions of the playback unit and make the necessary settings.

Recording VCR (the NV-DV2000)

- 1 Turn on the VCR.
- 2 Set **Edit Terminal** to **8mm**.
- 3 Press **INPUT SELECT** so that **A3** or **A4** is selected.
 - If the playback unit is connected to the external input on the rear of the NV-DV2000, select A2.
 - Press **INPUT SELECT** so that **DV1** or **DV2** after sliding **DV SELECT** to **1** or **2**, is selected.
 - When performing **Audio Dubbing**, **Audio Mixing** or **AV Insert**, select A2, A3 or A4.

Settings for Editing

This VCR also allows some settings for editing to be made at the On Screen Display (OSD).



Preparations

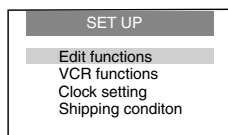
- Confirm that the TV is on and the VCR viewing channel is selected.
- Complete necessary connections and settings.
[C 28-35]

Search with Sound

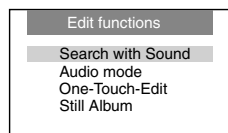
Operations

- 1 Press **SET UP**.

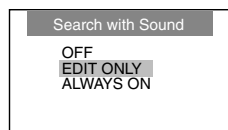
On Screen Display



- 2 Press **▲▼(CURSOR)** to select **Edit functions** and press **OK**.



- 3 Press **▲▼(CURSOR)** to select **Search with Sound** and press **OK**.



- 4 Press **▲▼(CURSOR)** to select **OFF**, **EDIT ONLY** or **ALWAYS ON**, and then press **OK**.

OFF: The sound cannot be heard during special playback.

EDIT ONLY: The sound can be heard during special playback only when an editing operation is in progress.

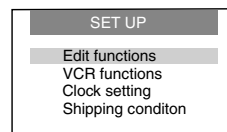
ALWAYS ON: The sound can be always heard during special playback.

- 5 Press **EXIT** to exit the On Screen Display.

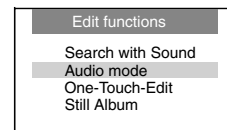
Audio mode

Operations

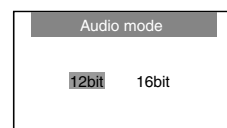
- 1 Press **SET UP**.



- 2 Press **▲▼(CURSOR)** to select **Edit functions** and press **OK**.



- 3 Press **▲▼(CURSOR)** to select **Audio mode** and press **OK**.



- 4 Press **◀▶(CURSOR)** to select **12bit** or **16bit**, and then press **OK**.

12bit:

Divides the audio area into two stereo audio tracks and four channels: STEREO1 (L-R) and STEREO2 (L-R).

- If a recording is made in 12bit audio mode, the sound is recorded on STEREO1 only, and is not recorded on STEREO2. STEREO2 is used to record new audio that is added through Audio Dubbing or Audio Mixing.

16bit:

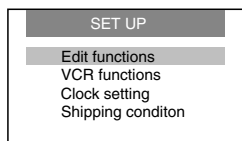
The whole audio area is used so that the sound will be recorded with a superior quality.

- 5 Press **EXIT** to exit the On Screen Display.

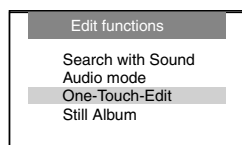
Setting for One-Touch-Edit

Operations

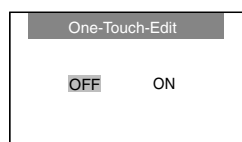
- 1 Press **SET UP**.
- 2 Press **▲▼ (CURSOR)** to select **Edit functions** and press **OK**.



- 3 Press **▲▼ (CURSOR)** to select **One-Touch-Edit** and press **OK**.



- 4 Press **◀▶ (CURSOR)** to select **OFF** or **ON**, and then press **OK**.



- OFF:** Select this whenever you are performing any editing function other than One-Touch-Edit.
- ON:** Select this in order to perform One-Touch-Edit.

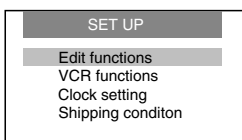
- One-Touch-Edit is possible only when **EDIT Terminal** is set to either **DV**, **EDIT**, or **8mm**, and **Edit Mode** is set to **RECORDER**.

- 5 Press **EXIT** to exit the On Screen Display.
[40–42]

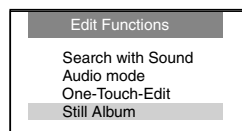
Setting for Album Function

Operations

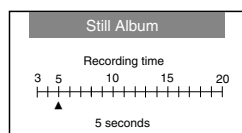
- 1 Press **SET UP**.
- 2 Press **▲▼ (CURSOR)** to select **Edit functions** and press **OK**.



- 3 Press **▲▼ (CURSOR)** to select **Still Album** and press **OK**.



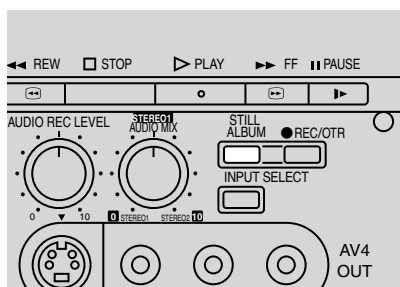
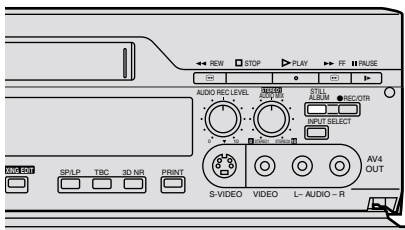
- 4 Press **◀▶ (CURSOR)** to select recording time, and **OK**.



- 5 Press **EXIT** to exit the On Screen Display.
[38]

Album Function



The album function lets you collect desired scenes (both moving and still pictures) and create the equivalent of a photo album but on a video cassette. The pictures can be copied onto the cassette from a video movie camera, a digital still camera or another VCR for any period of time that can preset.



Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Complete necessary connections and settings.
[C 28–35]

Operations

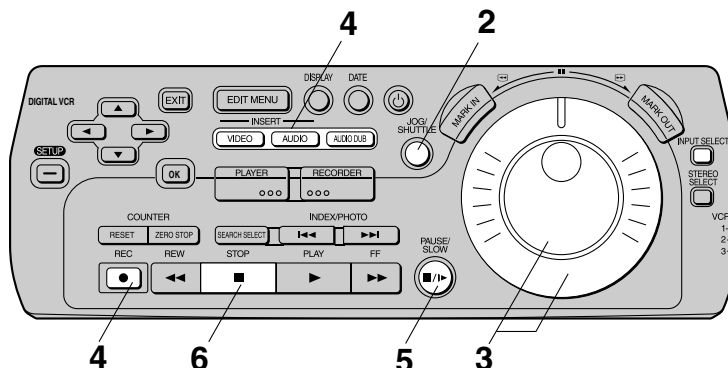
- 1 Press **STILL ALBUM** to put the VCR in the recording pause mode.

- 2 When the desired point is reached on the playback unit, press **STILL ALBUM** of this VCR again to start recording.
The VCR records the picture (and sound) for setting time and then automatically switches over to the recording pause mode.
• See [C 37] to change the Recording time.
- 3 Repeat steps 1 and 2 to record other scenes in succession.

- 4 When you have recorded all the desired scenes, press **■ (STOP)** to finish recording.

Notes:

- If you plan to connect a digital still camera, use a camera equipped with a video output socket. Use the cable supplied with the still camera to connect it. For details, read the operating instructions of the equipment to be connected.
- If you leave the VCR in the recording pause mode for more than 5 minutes in step 1 or 3, the VCR automatically switches over to the stop mode to protect the video heads. In this case, press **STILL ALBUM** again to put the VCR back in the recording pause mode.
- If you want to add background music or narration to the scenes recorded with the album function, perform Audio Dubbing as explained.
- Depending on the output system of the digital still camera, the pictures may not be recorded correctly.

Editing when Not Using an Edit Cable

To connect a VCR or Video Movie Camera without an Edit socket and use the NV-DV2000 as the Recording VCR.



Preparations

- Complete necessary connections and settings. [C 28–35]
- Connect the AV1 socket on the NV-DV2000 to the TV.
- Connect the AV2 socket or the AUDIO/VIDEO/S-VIDEO IN (AV3/AV4) sockets on the NV-DV2000 to the playback unit.

Set **INPUT SELECT** on this VCR as follows:

- A2: Through the AV2 socket
- A3: Through the AV3 sockets
- A4: Through the AV4 sockets

- If the playback unit has a DV terminal, connect to the DV1 or DV2 on the NV-DV2000 with a DV cable.

Operations

- 1 Using the controls on the playback unit, search for the edit start point, and then pause the playback.
- 2 Press **JOG/SHUTTLE** on the recording VCR, and check that the button is lit.
- 3 Search for the edit start point.
- 4 Press the button for the editing mode on the NV-DV2000.
To copy the contents of the tape in the playback unit as is: Press **● (REC)**.
To insert picture: Press **VIDEO INSERT**.
To insert sound: Press **AUDIO INSERT**.
To insert picture and sound: Press **VIDEO INSERT** and then press **AUDIO INSERT** (or vice versa).
To add new sound: Press **AUDIO DUB**.
For Audio Mixing: Press **AUDIO DUB** and then press **MIXING EDIT** on the front panel.
 - The Audio Mixing procedure differs in part from other editing operations. [C 42]

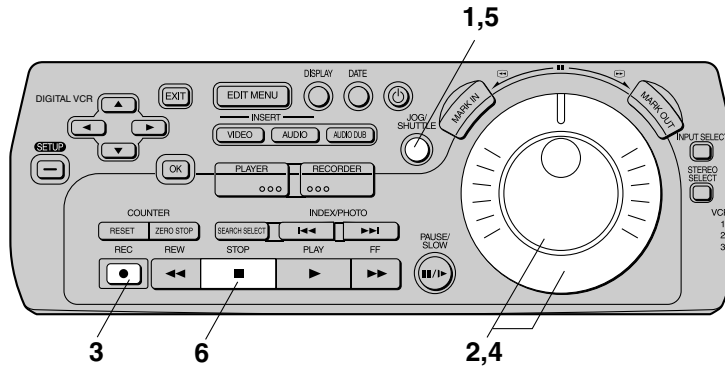
- 5 Press **|||> (PAUSE/SLOW)** on the NV-DV2000 and start playback on the playback unit simultaneously.
 - Editing begins.
- 6 Press **■ (STOP)** on the NV-DV2000, and then press **STOP** on playback unit to stop editing.

Notes:

- Although Copying can be performed in LP mode, Insert and Audio Dubbing cannot be performed with a tape recorded in LP mode. It is necessary to first copy the tape in SP mode.
- **Video Insert and Audio Insert are not possible in the following cases:**
When the tape in the recording VCR (the NV-DV2000) is:
Recorded in LP mode;
Blank, or contains a blank portion in the middle.
- **AV Insert, Audio Dubbing and Audio Mixing are not possible in the following cases:**
When the tape in the recording VCR (the NV-DV2000) is:
Recorded in 16bit audio mode;
Recorded in LP mode;
Blank, or contains a blank portion in the middle.
When **INPUT SELECT** is set to **DV1** or **DV2**.
- If the time display on the NV-DV2000 is set to tape counter mode during editing, the NV-DV2000 stops the editing operation automatically when the counter reaches "0:00.00".
(This function does not work when using the Copying or Audio Dubbing functions.)

One-Touch Assemble

If the One-Touch Edit function is used, Assemble editing can be performed by controlling the playback unit through the NV-DV2000.

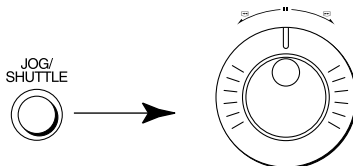


Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Complete necessary connections and settings. [28–35]
- Set **One-Touch-Edit** to **ON** on **Edit functions** menu. [37]

Operations

- 1 Press **JOG/SHUTTLE** on the Editing controller, and check that the button is lit.
- 2 Search for the edit start point on the recording VCR.



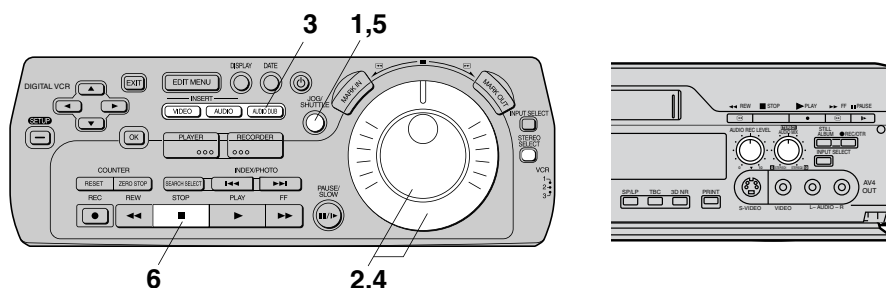
- 3 Press **● (REC)**.
 - The picture from the playback unit appears on the screen.
- 4 Search for the edit start point on the playback unit.
- 5 Press **JOG/SHUTTLE** on Editing controller.
 - Editing begins.
 - To continue editing, press **JOG/SHUTTLE** on the Editing controller, and repeat steps 4–5.
- 6 Press **■ (STOP)** on the Editing controller to stop editing.

Notes:

- Although Assemble editing can be performed in LP mode, Insert, Audio Dubbing, and Audio Mixing cannot be performed with a tape recorded in LP mode. It is necessary to first copy the tape in SP mode.
- In order to ensure that the editing operation is performed properly, the editing points should be set at least 20 seconds after the beginning of the tape.
- When using the Editing controller for remote control: In order to conserve battery power, **JOG/SHUTTLE** turns off after 30 seconds. If **JOG/SHUTTLE** turns off after the edit start point has been set on the recording unit (step 2), it is necessary to press **JOG/SHUTTLE** again (so that it is lit) before searching for the edit start point on the playback unit. If **JOG/SHUTTLE** turns off after the edit start point has been determined on the playback unit (step 4), it is necessary to press **JOG/SHUTTLE** again in order to start editing.

One-Touch Insert/Audio Dubbing

If the One-Touch Edit functions is used, Insert (Video Insert, Audio Insert, and AV Insert) and Audio Dubbing can be performed by controlling the playback unit through the NV-DV2000.



Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Complete necessary connections and settings.
[C 28–35]
- Set **One-Touch-Edit** to **ON** on **Edit functions** menu.
[C 37]

Operations

- 1 Press **JOG/SHUTTLE** on the Editing controller, and check that the button is lit.
- 2 Search for the edit start point on the recording VCR.
- 3 Press the button for the editing mode on the Editing controller.

To insert picture: Press **VIDEO INSERT**.

To insert sound: Press **AUDIO INSERT**.

To insert picture and sound: Press **VIDEO INSERT** and then press **AUDIO INSERT** (or vice versa).

To add new sound: Press **AUDIO DUB**.

- The picture from the playback unit appears on the screen.

V INSERT TBC
ST1
ST1

A INSERT
ST1
ST1

AV INSERT
ST1
ST1

A DUB ST 2
ST12

- 4 Search for the edit start point on the playback unit.
- 5 Press **JOG/SHUTTLE** on the Editing controller.
 - Editing begins.
 - To continue editing, press **JOG/SHUTTLE** on the Editing controller, and repeat steps 4–5.
- 6 Press **■ (STOP)** on the Editing controller to stop editing.

To Listen to the Edited Audio After Audio Dubbing

Press **STEREO SELECT** during playback and select **STEREO2**.

dB -∞ 30 20 10 5 0 OVER
ST 2
ST1 2

Notes:

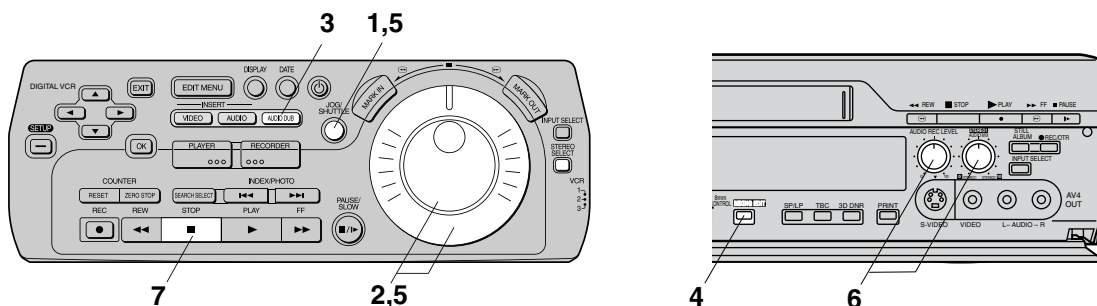
- **Video Insert and Audio Insert are not possible in the following cases:**
When the tape in the recording VCR (the NV-DV2000) is:
Recorded in LP mode;
Blank, or contains a blank portion in the middle.
- **AV Insert and Audio Dubbing are not possible in the following cases:**
When the tape in the recording VCR (the NV-DV2000) is:
Recorded in 16bit audio mode;
Recorded in LP mode;
Blank, or contains a blank portion in the middle.
When **INPUT SELECT** is set to **DV1** or **DV2**.
- If the time display on the NV-DV2000 is set to tape counter mode during editing, the NV-DV2000 stops the editing operation automatically when the counter reaches "0:00.00".
- In order to ensure that the editing operation is performed properly, the editing points should be set at least 20 seconds after the beginning of the tape.
- When using the Editing controller for remote control:
In order to conserve battery power, **JOG/SHUTTLE** turns off after 30 seconds.
If **JOG/SHUTTLE** turns off after the edit start point has been set on the recording unit (step 2), it is necessary to press **JOG/SHUTTLE** again (so that it is lit) before searching for the edit start point on the playback unit.
If **JOG/SHUTTLE** turns off after the edit start point has been determined on the playback unit (step 4), it is necessary to press **JOG/SHUTTLE** again in order to start editing.

For Quick Editing

One-Touch Audio Mixing

This function is used to mix the audio on STEREO1, which has already been recorded, with audio from an external recording source (A2, A3 or A4), and record the result on STEREO2.

This function is useful for adding new audio, such as music or a narration, to the original audio which has already been recorded.



Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Complete necessary connections and settings.
[☞28–35]
- Set **One-Touch-Edit** to **ON** on **Edit functions** menu.
[☞37]

Operations

- 1 Press **JOG/SHUTTLE** on the Editing controller, and check that the button is lit.
- 2 Search for the edit start point on the recording VCR.
- 3 Press **AUDIO DUB** on the Editing controller.

A DUB ST 2
ST12

 - The picture from the playback unit appears on the screen.
- 4 Press **MIXING EDIT**.
- 5 Search for the edit start point on the playback unit.
- 6 Press **JOG/SHUTTLE** on the Editing controller.
 - Editing begins.
 - If you wish to adjust the volume of the original audio (STEREO1) and external recording source (A2, A3 or A4) during Audio Mixing,

AUDIO MIX:

To adjust the volume of the original audio (STEREO1).

AUDIO REC LEVEL:

To adjust the volume of the audio from external recording source (A2, A3 or A4).



To Monitor the Mixed Audio after Audio Mixing
Press **STEREO SELECT** during playback and select STEREO2.



Notes:

- **Audio Mixing is not possible in the following cases:**
 - When the tape in the recording VCR (the NV-DV2000) is:
 - Recorded in 16bit audio mode;
 - Recorded in LP mode;
 - Blank, or contains a blank portion in the middle.
 - When **INPUT SELECT** is set to **DV1** or **DV2**.
- In order to ensure that the editing operation is performed properly, the editing points should be set at least 20 seconds after the beginning of the tape.
- When using the Editing controller for remote control:
 - In order to conserve battery power, **JOG/SHUTTLE** turns off after 30 seconds.
 - If **JOG/SHUTTLE** turns off after the edit start point has been set on the recording unit (step 2), it is necessary to press **JOG/SHUTTLE** again (so that it is lit) before searching for the edit start point on the playback unit.
 - If **JOG/SHUTTLE** turns off after the edit start point has been determined on the playback unit (step 5), it is necessary to press **JOG/SHUTTLE** again in order to start editing.

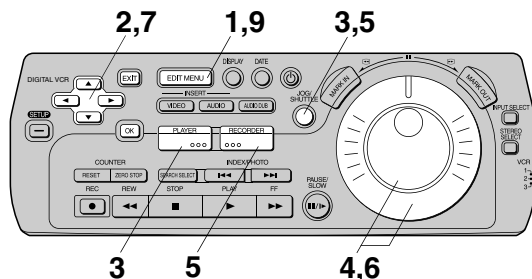
- To continue editing, press **JOG/SHUTTLE** on the Editing controller, and repeat steps 5–6.

- 7 Press **■ (STOP)** on the Editing controller to stop editing.

Manual Copying

This function can be used to copy tapes between digital video equipments with practically no deterioration in quality.

This function can also copy a tape that was recorded in S-VHS (VHS) format onto a digital video tape.



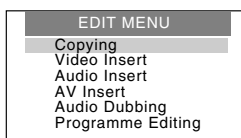
Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Complete necessary connections and settings.
[28–35]

Operations

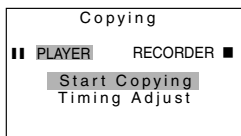
- 1 Press **EDIT MENU**.

On Screen Display



- 2 Press **▲▼ (CURSOR)** to select **Copying**, and then press **OK**.

- 3 Press **PLAYER**, and then press **JOG/SHUTTLE**.
 - The picture from the playback unit appears on the screen.

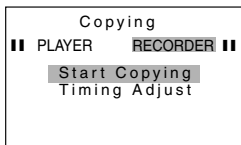


- 4 Search for the edit start point on the playback unit.

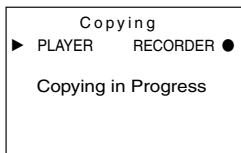
- 5 Press **RECORDER**, and then press **JOG/SHUTTLE**.
 - The picture from the recording VCR appears on the screen.

- 6 Search for the edit start point on the recording VCR.

- 7 Press **▲▼ (CURSOR)** to select **Start Copying**.



- 8 Press **OK**.
 - Editing begins.



- 9 Press **EDIT MENU** to stop editing.

- Operation now returns to the screen which appears in step 3. This makes it possible to continue with editing or change the point at which editing is to start.

- 10 Press **EXIT**.

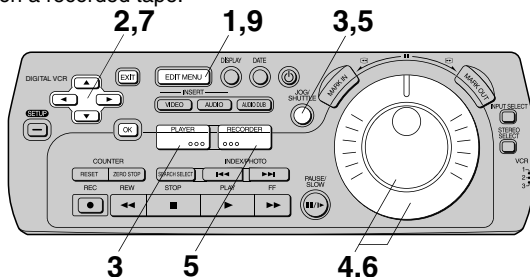
- The On Screen Display disappears.

Notes:

- If a digital video tape is copied without connecting a DV cable, the original sub code data (photoshot index signals, recording date, etc.) is not copied.
- Although Copying can be performed in LP mode, Insert and Audio Dubbing cannot be performed with a tape recorded in LP mode. It is necessary to first copy the tape in SP mode.
- In order to ensure that the editing operation is performed properly, the editing points should be set at least 20 seconds after the beginning of the tape.
- The pause operation may be indicated on the display of the playback unit even though the playback unit is actually playing the tape in slow motion.
- Up to ± 1 second of slight deviation in the specified edit start position can be corrected. See [55] for Edit Timing Adjustment.

Manual Insert

This function is used to replace the picture and sound on a recorded tape.



Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Complete necessary connections and settings. [28–35]

Example: Video Insert

Operations

1 Press **EDIT MENU**.

2 Press **▲▼ (CURSOR)**

to select **Video Insert**, and then press **OK**.

To insert picture:

Select **Video Insert**.

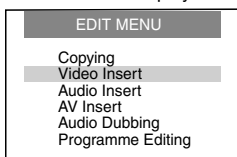
To insert sound:

Select **Audio Insert**.

To insert picture and sound:

Select **AV Insert**.

On Screen Display



3 Press **PLAYER** and **JOG/SHUTTLE**.

- The picture from the playback unit appears on the screen.

4 Search for the edit start point on the playback unit.

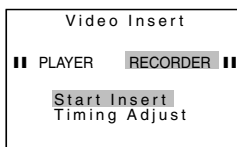
5 Press **RECORDER** and **JOG/SHUTTLE**.

- The picture from the recording VCR appears on the screen.

6 Search for the edit start point on the recording VCR.

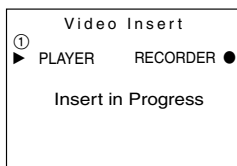
7 Press **▲▼ (CURSOR)**

to select **Start Insert**.



8 Press **OK**.

- Editing begins.



9 Press **EDIT MENU** to stop editing.

- Operation now returns to the screen which appears in step 3. This makes it possible to continue with editing or change the point at which editing is to start.

10 Press **EXIT**.

- The On Screen Display disappears.

Notes:

- **Video Insert and Audio Insert are not possible in the following cases:**

When the tape in the recording VCR (the NV-DV2000) is:

Recorded in LP mode;

Blank, or contains a blank portion in the middle.

- **AV Insert is not possible in the following cases:**

When the tape in the recording VCR (the NV-DV2000) is:

Recorded in 16bit audio mode;

Recorded in LP mode;

Blank, or contains a blank portion in the middle.

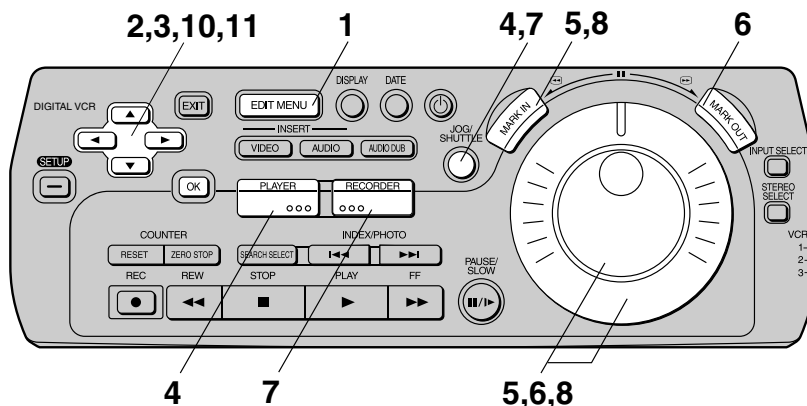
When **INPUT SELECT** is set to **DV1** or **DV2**.

- In order to ensure that the editing operation is performed properly, the editing points should be set at least 20 seconds after the beginning of the tape.
- The pause operation may be indicated on the display of the playback unit even though the playback unit is actually playing the tape in slow motion.
- Up to ± 1 second of slight deviation in the specified edit start position can be corrected. See [55] for Edit Timing Adjustment.

Programme Assemble

This function can be used to link together desired scenes on a tape.

This function can also be used to skip unnecessary scenes recorded on a tape and copy them onto a separate tape.



Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Complete necessary connections and settings.
[C 28–35]

Operations

- 1 Press **EDIT MENU**.

On Screen Display

EDIT MENU

Copying
Video Insert
Audio Insert
AV Insert
Audio Dubbing
Programme Editing

- 2 Press **▲▼ (CURSOR)** to select **Programme Editing**, and then press **OK**.

Programme Editing

Assemble
Video Insert
Audio Insert
AV Insert
Audio Dubbing

Erase all programmes

- 3 Press **▲▼ (CURSOR)** to select **Assemble**, and then press **OK**.

- 4 Press **PLAYER** and **JOG/SHUTTLE**.

- The picture from the playback unit appears on the screen.

- 5 Search for the edit start point on the playback unit and press **MARK IN**.

[Page1] Assemble
① **PLAYER**
In 0h16m38s20f
Out h m s f

- 6 Search for the edit end point on the playback unit and press **MARK OUT**.

[Page1] Assemble
① **PLAYER**
In 0h18m09s13f
Out 0h16m38s20f

- 7 Press **RECORDER** and **JOG/SHUTTLE**.

- The picture from the recording VCR appears on the screen.

- 8 Search for the edit start point on the recording VCR and press **MARK IN**.

[Page1] Assemble
① **RECORDER**
In 0h16m38s20f
Out 0h16m38s20f

- 9 Press **OK**.

To check and change programmes:

Select **Confirm/Change** and then press **OK**.

- To confirm, change, insert or erase editing programmes, see [C 52–53].
- Programmes cannot be inserted or erased through the recording unit.

Assemble
Confirm/Change
Insert a programme
Erase a programme
Preview
Start Assemble
Review
Timing Adjust

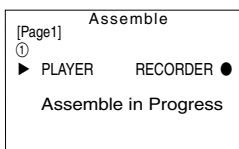
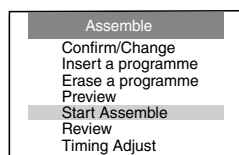
Confirm/Change
PLAYER [Page 1]
① In 0h 16m 38s 20f
Out 0h 18m 09s 13f
② In 0h 00m 01s 18f
Out 0h 01m 47s 22f
③ In h m s f
Out h m s f
④ In h m s f
Out h m s f

To continue setting programmes:

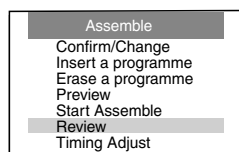
- ① Press **EDIT MENU**.
- ② Press **PLAYER**.
- ③ Using **◀▶ (CURSOR)**, select the programme number.
The programme number changes each time these buttons are pressed.
(Up to 20 programmes can be set.
10 programmes can be set on one page; if this number is exceeded, the display automatically changes to the next page.)
- ④ Repeat steps 4–6 and 9.

- 10 Press **▲▼ (CURSOR)** to select **Start Assemble** to start editing, and then press **OK**.

- Editing begins after the playback unit and the recording VCR both rewind their tapes to the edit start points.



- 11 After completing editing, press **▲▼ (CURSOR)** to select **Review**, and then press **OK**.
- The edited pictures are played back.



To interrupt editing or Review:

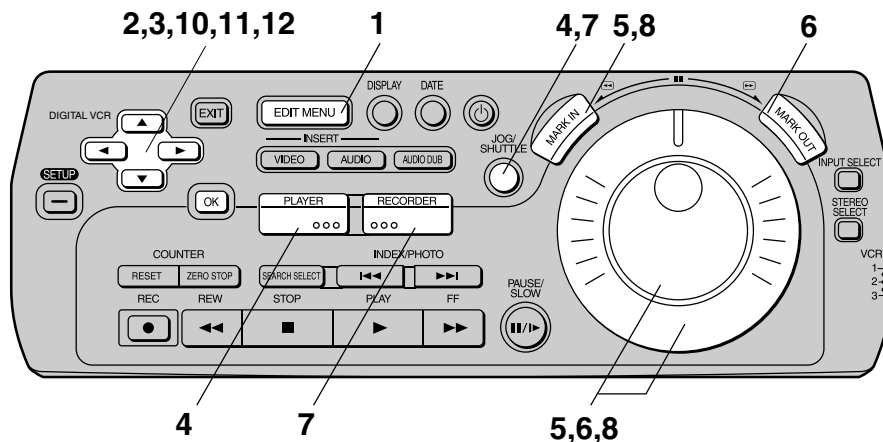
Press **EDIT MENU**.

Notes:

- Programme Editing can be performed using either the tape counter or Time code display, but the Time code display should be used if the units are connected only by a DV cable.
- If you attempt to switch to the tape counter display in order to perform editing after setting the editing points using the Time code display, the Erase all programmes screen is displayed.
(The Erase all programmes screen is also displayed when you change from the tape counter display to the Time code display.)
- After setting a programme, if you attempt to set another programme in a different editing operation, the set contents for the previous editing operation remain on the setting screen. In order to prevent editing errors, perform the Erase all programmes operation [F53] whenever you set a programme under a different editing mode.
- Programme editing can not be performed with a video movie camera that has a 4-digit counter.
- Although Assemble editing can be performed in LP mode, Insert, Audio Dubbing, and Audio Mixing cannot be performed with a tape recorded in LP mode. It is necessary to first copy the tape in SP mode.
- In order to ensure that the editing operation is performed properly, the editing points should be set at least 20 seconds after the beginning of the tape.
- The editing operation may not be performed correctly if the set duration of a programme is less than 4 seconds.
- On a video equipment whose Time code display or tape counter display does not show the frame value, the area where the frame value is displayed appears as "00f" or it remains blank.
With some units, the frame value may be displayed when **MARK IN** or **MARK OUT** is pressed in steps 5 and 6 even if the unit concerned does not show the frame value.
- The Preview function cannot be used with the Assemble function.
- Up to ± 1 second of slight deviation in the specified edit start/end position can be corrected. See [F54] for Edit Timing Adjustment.

Programme Insert

This function is used to replace the picture and sound on a recorded tape.



Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Complete necessary connections and settings. [28-35]

Example: Video Insert

Operations

- 1 Press **EDIT MENU**.

On Screen Display

EDIT MENU
COPYING
Video Insert
Audio Insert
AV Insert
Audio Dubbing
Programme Editing

- 2 Press **▲▼ (CURSOR)** to select **Programme Editing**, and then Press **OK**.

Programme Editing
Assemble
Video Insert
Audio Insert
AV Insert
Audio Dubbing
Erase all programmes

- 3 Press **▲▼ (CURSOR)** to select the desired editing operation, and then press **OK**.

To insert picture:

Video Insert.

To insert sound:

Audio Insert.

To insert picture and sound: **AV Insert.**

- 4 Press **PLAYER** and **JOG/SHUTTLE**.

- The picture from the playback unit appears on the screen.

- 5 Search for the edit start point on the playback unit and press **MARK IN**.

Video Insert
① PLAYER
In 0h16m39s19f
Out 0h16m39s19f
h m s f

- 6 Search for the edit end point on the playback unit and press **MARK OUT**.

Video Insert
① PLAYER
In 0h20m24s10f
Out 0h20m24s10f
h m s f

- 7 Press **RECORDER** and **JOG/SHUTTLE**.
 - The picture from the recording VCR appears on the screen.

- 8 Search for the edit start point on the recording VCR and press **MARK IN**.

Video Insert
① RECORDER
In 0h05m22s10f
Out 0h05m22s10f
h m s f

- 9 Press **OK**.

To check and change programmes:
Select **Confirm/Change** and then press **OK**.

- To confirm, change, insert or erase editing programmes, see [52-53].

- Programmes cannot be inserted or erased through the recording unit.

Video Insert
Confirm/Change
Insert a programme
Erase a programme
Preview
Start Assemble
Review
Timing Adjust

Confirm/Change
PLAYER
① In 0h 16m 38s 20f
Out 0h 20m 24s 10f
② In 0h 00m 01s 18f
Out 0h 01m 47s 22f
③ In h m s f
Out h m s f
④ In h m s f
Out h m s f

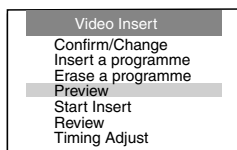
To continue setting programmes:

- ① Press **EDIT MENU**.
- ② Press **PLAYER**.
- ③ Using **◀▶ (CURSOR)**, select the programme number.
The programme number changes each time these buttons are pressed.
Up to 10 programmes can be set.
- ④ Repeat steps 4–9.

10 Press **▲▼ (CURSOR)**

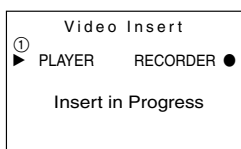
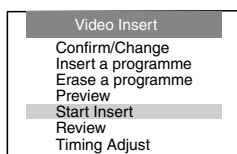
to select **Preview** to confirm the editing operation before performing actual editing, and then press **OK**.

- Preview begins after the playback unit and the recording VCR both rewind their tapes to the edit start points.



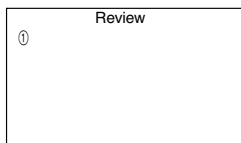
11 Press **▲▼ (CURSOR)** to select **Start Insert** to start editing, and then press **OK**.

- Editing begins after the playback unit and the recording VCR both rewind their tapes to the edit start points.



12 After completing editing, press **▲▼ (CURSOR)** to select **Review**, and then press **OK**.

- The edited pictures are played back.



To interrupt editing, Preview or Review:

Press **EDIT MENU**.

Notes:

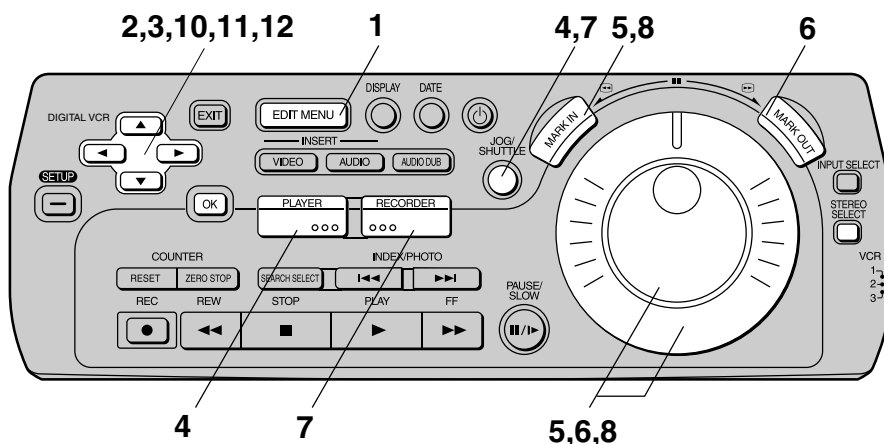
- Programme Editing can be performed using either the tape counter or Time code display.
- If you attempt to switch to the tape counter display in order to perform editing after setting the editing points using the Time code display, the Erase all programmes screen is displayed.
(The Erase all programmes screen is also displayed when you change from the tape counter display to the Time code display.)
- After setting a programme, if you attempt to set another programme in a different editing mode, the set contents for the previous editing mode remain on the setting screen. In order to prevent editing errors, perform the Erase all programmes operation [53] whenever you set a programme under a different editing mode.
- Programme Editing can not be performed with a video movie camera that has a 4-digit counter.
- **Video Insert and Audio Insert are not possible in the following cases:**
When the tape in the recording VCR (the NV-DV2000) is:
Recorded in LP mode;
Blank, or contains a blank portion in the middle.
- **AV Insert is not possible in the following cases:**
When the tape in the recording VCR (the NV-DV2000) is:
Recorded in 16bit audio mode;
Recorded in LP mode;
Blank, or contains a blank portion in the middle.
When **INPUT SELECT** is set to **DV1** or **DV2**.

Notes on editing point setting

- The Programme Insert and Audio Dubbing functions require the setting of only three editing points: the in and out points on the playback unit and the in point on the recording unit, or the in point on the playback unit and the in and out points on the recording unit.
- If both in and out points are set on both the playback unit and the recording unit, and the times between the points do not match, editing stops at the first out point that is reached.
- In order to ensure that the editing operation is performed properly, the editing points should be set at least 20 seconds after the beginning of the tape.
- The editing operation may not be performed correctly if the set duration of a programme is less than 4 seconds.
- On a video equipment whose Time code display or tape counter display does not show the frame value, the area where the frame value is displayed appears as "00f" or it remains blank.
With some units, the frame value may be displayed when **MARK IN** or **MARK OUT** is pressed in steps 5 and 6 even if the unit concerned does not show the frame value.
- Up to ± 1 second of slight deviation in the specified edit start/end position can be corrected. See [54] for Edit Timing Adjustment.

Programme Audio Dubbing

This function is used to add new sound on the STEREO2 track of previously recorded tape.



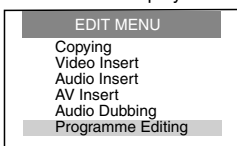
Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Complete necessary connections and settings. [28–35]

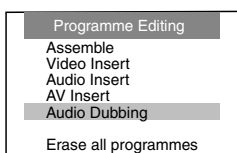
Operations

- 1 Press **EDIT MENU**.

On Screen Display

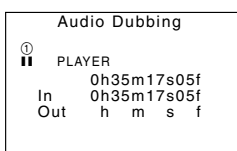


- 3 Press **▲▼ (CURSOR)** to select **Audio Dubbing**, and then press **OK**.

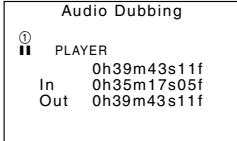


- 4 Press **PLAYER** and **JOG/SHUTTLE**.
 - The picture from the playback unit appears on the screen.

- 5 Search for the edit start point on the playback unit and press **MARK IN**.



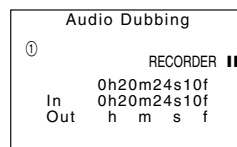
- 6 Search for the edit end point on the playback unit and press **MARK OUT**.



- 7 Press **RECORDER** and **JOG/SHUTTLE**.

- The picture from the recording VCR appears on the screen.

- 8 Search for the edit start point on the recording VCR and press **MARK IN**.

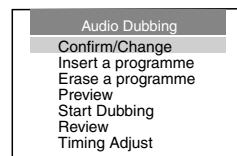


- 9 Press **OK**.

To check and change programmes:

Select **Confirm/Change** and then press **OK**.

- To confirm, change, insert or erase editing programmes, see [52–53].



To continue setting programmes:

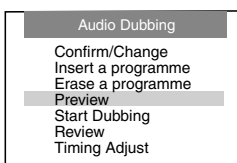
- ① Press **EDIT MENU**.
- ② Press **PLAYER**.
- ③ Using **◀▶ (CURSOR)**, select the programme number.

The programme number changes each time these buttons are pressed.

Up to 10 programmes can be set.
- ④ Repeat steps 4–9.

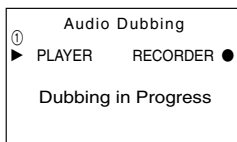
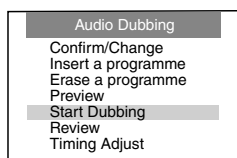
- 10 Press **▲▼ (CURSOR)** to select **Preview** to confirm the editing operation before performing actual editing, and then press **OK**.

- Preview begins after the playback unit and the recording VCR both rewind their tapes to the edit start points.

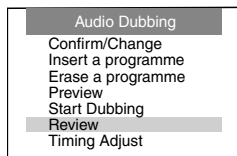


- 11 Press **▲▼ (CURSOR)** to select **Start Dubbing** to start editing, and then press **OK**.

- Editing begins after the playback unit and the recording VCR both rewind their tapes to the edit start points.



- 12 After completing editing, press **▲▼ (CURSOR)** to select **Review**, and then press **OK**.
- The edited sounds are played back.



To interrupt editing, Preview or Review:
Press **EDIT MENU**.

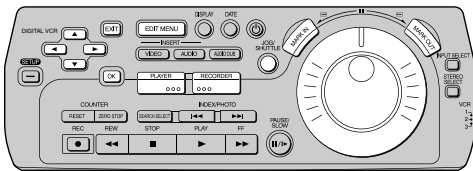
To listen to the edited audio after Audio Dubbing

Press **STEREO SELECT** during playback and select **STEREO2**.

Notes:

- Programme Editing can be performed using either the tape counter or Time code display.
- If you attempt to switch to the tape counter display in order to perform editing after setting the editing points using the Time code display, the Erase all programmes screen is displayed.
(The Erase all programmes screen is also displayed when you change from the tape counter display to the Time code display.)
- Programme editing can not be performed with a video movie camera that has a 4-digit counter.
- After setting a programme, if you attempt to set another programme in a different editing mode, the set contents for the previous editing mode remain on the setting screen. In order to prevent editing errors, perform the Erase all programmes operation [53] whenever you set a programme under a different editing mode.
- **Audio Dubbing is not possible in the following cases:**
When the tape in the recording VCR (the NV-DV2000) is:
Recorded in 16bit audio mode;
Recorded in LP mode;
Blank, or contains a blank portion in the middle
When **INPUT SELECT** is set to **DV1** or **DV2**.
- The Programme Insert and Audio Dubbing functions require the setting of only three editing points: the in and out points on the playback unit and the in point on the recording unit, or the in point on the playback unit and the in and out points on the recording unit.
- If both in and out points are set on both the playback unit and the recording unit, and the times between the points do not match, editing stops at the first out point that is reached.
- In order to ensure that the editing operation is performed properly, the editing points should be set at least 20 seconds after the beginning of the tape.
- The editing operation may not be performed correctly if the set duration of a programme is less than 4 seconds.
- On a video equipment whose Time code display or tape counter display does not show the frame value, the area where the frame value is displayed appears as "00f" or it remains blank.
With some units, the frame value may be displayed when **MARK IN** or **MARK OUT** is pressed in steps **5** and **6** even if the unit concerned does not show the frame value.
- Up to ± 1 second of slight deviation in the specified edit start/end position can be corrected. See [54] for Edit Timing Adjustment.

Other Editing Functions



Once all programme settings are completed, the screen shown below is displayed.

Example: Video Insert

On Screen Display

Video Insert
Confirm/Change
Insert a programme
Erase a programme
Preview
Start Assemble
Review
Timing Adjust

This portion varies, depending on the editing function that was programmed.

To Check and Change a Programme

- 1 Press **▲▼ (CURSOR)** to select **Confirm/Change**, and then press **OK**.
 - The programme list is displayed.

Video Insert
Confirm/Change
Insert a programme
Erase a programme
Preview
Start Assemble
Review
Timing Adjust

- 2 Press **▲▼ (CURSOR)** to select the programme number where a programme is to be inserted, and then press **OK**.
 - The Confirm/Change screen is displayed.

Confirm/Change
PLAYER
① In 0h 16m 38s 20f
Out 0h 20m 24s 10f
② In 0h 00m 01s 18f
Out 0h 01m 47s 22f
③ In h m s f
Out h m s f
④ In h m s f
Out h m s f

To check the programme list for the recording unit press **RECORDER**.

To just confirm the programme settings, press **EDIT MENU**.

If corrections are needed, continue with the procedure described below.

- 3 Press **JOG/SHUTTLE**.

- 4 Use the Jog Dial/Shuttle Ring to search for the editing point that is to be corrected.

Programme change
①
II PLAYER
In 0h18m09s13f
Out 0h16m38s20f
Out 0h18m09s13f

- 5 To change an edit start point, press **MARK IN**.
To change an end point, press **MARK OUT**.

- 6 Once all changes are completed, press **OK**.

To Insert a New Programme Between Existing Programmes:

- 1 Press **▲▼ (CURSOR)** to select **Insert a programme**, and then press **OK**.
 - The programme list is displayed.

Video Insert
Confirm/Change
Insert a programme
Erase a programme
Preview
Start Assemble
Review
Timing Adjust

- 2 Press **▲▼ (CURSOR)** to select the programme number where a programme is to be inserted, and then press **OK**.
 - The Insert a programme screen is displayed.

Insert a programme
PLAYER
① In 0h 16m 38s 20f
Out 0h 18m 09s 13f
② In 0h 00m 01s 18f
Out 0h 01m 47s 22f
③ In h m s f
Out h m s f
④ In h m s f
Out h m s f

- 3 Refer to the pages that describe the Programme Editing functions [46–51], and set the new programme.

Insert a programme
①
II PLAYER
0h32m41s25f
In h m s f
Out h m s f

- 4 When setting is complete, press **OK**.

To Cancel a Programme:

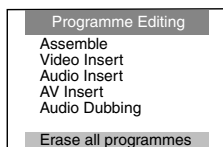
- 1 Press **▲▼ (CURSOR)** to select **Erase a programme**, and then press **OK**.
 - The programme list is displayed.

Video Insert
Confirm/Change
Insert a programme
Erase a programme
Preview
Start Assemble
Review
Timing Adjust

- 2 Press **▲▼ (CURSOR)** to select the programme number to be erased, and then press **OK**.

To Cancel All Editing Programmes:

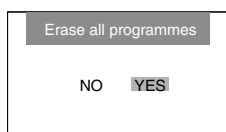
- 1 Press **EDIT MENU** twice.



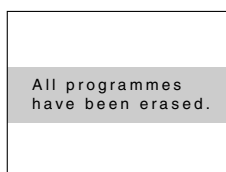
- 2 Press **▲▼ (CURSOR)** to select **Erase all programmes**, and then press **OK**.

- The Erase all programmes screen is displayed.

- 3 Press **◀▶ (CURSOR)** to select **YES**, and then press **OK**.



- The screen returns to the **Programme Editing** menu.
- After the message indicating that "**All programmes have been erased.**" appears on the screen, operation returns to the **EDIT MENU** screen.



If the **EDIT MENU** screen is cancelled before the above procedure is performed, the method for displaying the **Programme Editing** changes. Press **EDIT MENU** so that the **EDIT MENU** screen is displayed. Use to select **Programme Editing**, and then press **OK**.

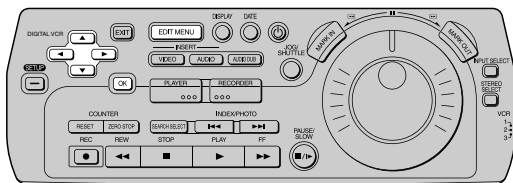
Note:

- Programmes set in the recording unit for the Assemble editing function cannot be inserted or erased.

Edit Timing Adjustment

When performing editing in conjunction with a unit which has a different mechanism, there may be a lag in the edit start point due to a deviation between the time a pause cancellation signal is received by the recording unit and the time recording actually begins.

Edit Timing Adjustment is used to compensate the edit start and end time in light of this start-up time deviation.



Programme Editing

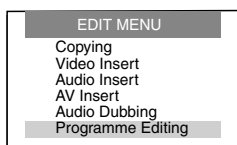
After setting edit start/end points, the actual editing operation may start slightly before or slightly after the position that was set, depending on the equipment that is connected. The procedure described below can adjust the edit timing in order to correct for errors of up to ± 1 second in the edit start points and edit end points on the playback unit.

Example: Video Insert

1 Press **EDIT MENU**.

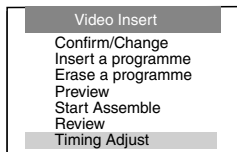
2 Press **▲▼ (CURSOR)** to select **Programme Editing**, and then press **OK**.

On Screen Display

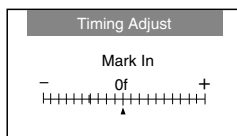


3 Press **▲▼ (CURSOR)** to select desired editing operation, and then press **OK** twice.

4 Press **▲▼ (CURSOR)** to select **Timing Adjust**, and then press **OK**.



5 Adjust the timing for the edit start point by setting the amount of the discrepancy for the start-up time.



- The setting is displayed in frames (1/25 of a second) units.
Press **► (CURSOR)** if the start point is too early;
Press **◄ (CURSOR)** if it is too late.
- Each time the button is pressed, the tape moves by 1 frame.
- Corrections can be made in the range of ± 30 frames.

6 Press **OK**.

7 Adjust the timing for the edit end point in same way.

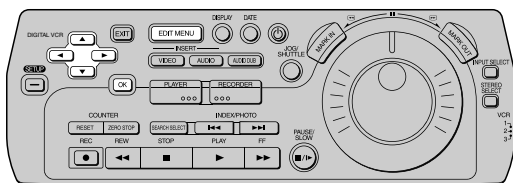
8 Press **OK**.

9 Press **▲▼ (CURSOR)** to select **Start Insert (Assemble or Dubbing)**, and then press **OK**.

- If the results of editing indicate that the adjustment is inadequate, repeat steps 4–8.

Notes:

- The procedure described on these pages is to be performed after exiting the **EDIT MENU** screen. If this procedure is performed after having executed Start Editing or Review, start this procedure from step 4 on the Video Insert (Assemble, Audio Insert, AV Insert or Audio Dubbing) screen.
- The adjusted frame unit is applied to all of the programmes that have been set at the moment when the adjustment is made.



Manual Editing

If there is a deviation in the results of a manual editing operation, the timing of the edit start (In) position on the playback unit can be adjusted by approximately ± 1 second. Perform the procedure described below when setting an edit start point in any editing mode.

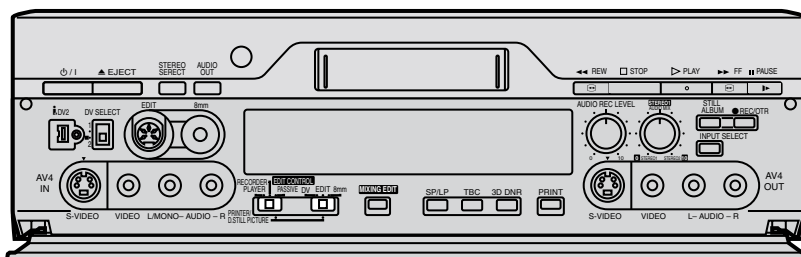
Example: Manual Copying

- | | |
|--|-------------------|
| | On Screen Display |
| 1 Press EDIT MENU . | |
| 2 Press ▲▼ (CURSOR) to select Copying , and then press OK . | |
| 3 Press ▲▼ (CURSOR) to select Timing Adjust , and then press OK . | |
| 4 Adjust the timing for the edit start point by setting the amount of the discrepancy for the start-up time. | |
| <ul style="list-style-type: none"> The setting is displayed in frames (1/25 of a second) units. Press ▶ (CURSOR) if the start point is too early; Press ◀ (CURSOR) if it is too late. Each time the button is pressed, the tape moves by 1 frame. Corrections can be made in the range of ± 30 frames. | |
| 5 Press OK . | |
| 6 Press ▲▼ (CURSOR) to select Start Copying (Insert, Dubbing) , and then press OK . | |
| <ul style="list-style-type: none"> If the results of editing indicate that the adjustment is inadequate, repeat steps 3–5. | |

Tape Trade Editing

When performing a Programme Editing after this VCR and Panasonic Digital Video Camera have been connected using an Edit cable and a DV cable (cable for sending video and audio signals), this function enables the Editing controller of this VCR to set the edit points for the playback unit.

It makes it easy to accomplish those operations using the Jog/Shuttle functions, which are so crucial for setting the edit points, with the same operational "feel" of the operating the playback unit without depending on the playback unit operations.

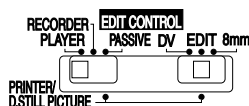


Preparation

- Complete necessary connections and settings.

Settings for the tape in the playback unit

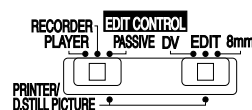
- 1 Insert the tape to be used for the playback unit in this VCR, and set the switches as shown below.



- 2 Register the playback unit's editing programmes. (Refer to the procedure for **Programme Editing** on pages 46 to 51.)
- 3 Remove the tape to be used for the playback unit from this VCR, and insert it in the playback unit. (Leave the playback unit in the playback mode.)

Settings for the tape in the recording unit

- 4 Insert the tape to be used for the recording VCR, and set the switches as shown below.



- 5 Register the recording VCR's editing programmes. (Refer to the procedure for **Programme Editing** on pages 46 to 51.)
- 6 Editing the registered programmes. (Refer to the procedure for **Programme Editing** on pages 46 to 51.)

Note:

- This function cannot be used for editing operations involving **AV Insert**, **Audio Dubbing** or **Audio Mixing**.

Glossary of Terms

Assemble

With the Assemble function, only the required portions of the original (source) tape are copied to another tape and linked together.

Audio Dubbing

You can record two audio tracks (Stereo 1 and Stereo 2) on a tape that is recorded in 12bit audio mode. (When the tape is first recorded, the audio is recorded only in the Stereo 1 track.) The Audio Dubbing function allows you to add new, separate audio in the Stereo 2 track.

Audio Mixing

You can record two audio tracks (Stereo 1 and Stereo 2) on a tape that is recorded in 12bit audio mode. (When the tape is first recorded, the audio is recorded only in the Stereo 1 track.) The Audio Mixing function allows you to mix the original audio from Stereo 1 with new audio from a line input and record the result in the Stereo 2 track.

Copying

The Copying function copies material previously recorded on one tape onto another tape with no changes.

Insert

The Insert function allows you to insert different material into previously recorded video or audio. There are three variations of the Insert function: Video Insert, which inserts video only; Audio Insert, which inserts audio only, and AV Insert, which inserts both audio and video.

SP/LP Mode

There are two different tape speed modes for digital video: SP and LP.

“SP” is short for “Standard Play”, and “LP” is short for “Long Play”.

LP mode permits recording for about 1.5 times as long as SP mode. Although the image quality of LP mode is as good as that of SP mode, in following cases mosaic-like patterns may appear on the playback picture or the picture may not be played back correctly.

- When a cassette recorded in LP mode on this VCR is played back on other digital video equipment.
 - When a cassette recorded in LP mode on other digital video equipment is played back on this VCR.
 - When a cassette recorded in LP mode on this VCR is played back on other digital video equipment not featuring LP mode.
 - When played in slow motion or frame by frame.
- In addition, the Insert, Audio Dubbing, and Audio Mixing functions cannot be used with a tape that was recorded in LP mode.

Digital Video System

In the digital video system, picture and sound are converted into digital signals and recorded onto tape. This completely digital recording allows recording and playback of picture and sound with minimum quality deterioration.

In addition, such data as Time Code, Date and Time are also automatically recorded as digital signals.

Features

- Superior picture resolution
- Excellent signal-to-noise ratio
- Stable pictures
- Minimized quality deterioration in dubbing
- Minimized cross colour distortion
- Minimized quality deterioration in editing
- PCM digital sound
- No picture deterioration in LP Mode
- 6.35 mm-wide tape
- Compact cassette with long recording time
- Time Code editing

PCM Sound

For recording of the sound, Digital Video Cassette Recorder offers the choice between two different PCM Audio Recording Mode.

- 16 bit 48 kHz 1track, 2 channels
- 12 bit 32 kHz 2tracks, 4 channels

The “16bit, 48 kHz, 1track 2 channels” mode offers superior recording sound quality.

The “12bit, 32 kHz, 2 tracks 4 channels” mode lets you record the original sound on two channels and the dubbed sound on two separate channels.

Sub Code

The digital recording system offers the added capability of recording sub code containing various data.

The following data is recorded as sub code on the Digital Video Cassette Recorder.

- Time Code
- Recording date and time
- Index signals for locating the still images recorded in the Photoshot Mode
- Index signals for locating the beginning of scenes marked with an index signal

TBC (Time Base Corrector)

This function improves the horizontal shaking and the subtle distortion in the vertical lines which tend to take place when analogue VHS-C or analogue 8 mm format tapes are played back.

- For normal use, activate the **TBC** function.

DV TERMINAL

This terminal is used to input/output video and audio data on digital video equipment. Because the video and audio data is sent through the **DV** cable as digital signals, there is practically no deterioration in video and audio quality after copying. In addition, because the hardware automatically determines the direction of flow for input and output signals according to the state of the unit, there is no need to change the connections around when switching between input and output, as is the case with conventional **AV** cables.

In addition, the **DV** terminal on the NV-DV2000 can also send control signals that are required in editing operations. If a Panasonic **Digital Video Camera** is used as the playback unit, only one **DV** cable needs to be connected between the camera and the NV-DV2000 in order to perform the following editing functions:

Copying, Assemble, Video Insert, and Audio Insert.

(Such a configuration does not permit **AV Insert**, **Audio Dubbing**, or **Audio Mixing**. **AV** cables must also be connected.)

The following functional differences exist when the recording unit and the playback unit are connected through the **DV** terminal, as opposed to when they are connected through the audio and video sockets:

- The original sub code data (date of the recording, photoshot index signals, etc.) on the playback unit is copied as is on the recording unit. (Time codes are not copied.)
- The audio is recorded in the same mode (12bit or 16bit) on the recording unit as it was on the playback unit. (If you want to change the audio recording mode, the units must be connected through the audio and video sockets, not the **DV** terminal.)
- No audio is output while searching with the Jog Dial/Shuttle Ring.
- When playing a tape that was recorded with two audio channels (main and sub; from a bilingual broadcast, for example), both the main audio channel and the sub audio channel are output, regardless of the audio select (main/sub) setting.
- Horizontal sway may appear at the bottom of the screen for video input from the **DV** terminal, but this has no effect on the recording.

Time code

Time Code signals are time data that is recorded on the tape. The time is expressed in units of hours (h), minutes (m), seconds (s) and frames (f) (25 frames/sec). Time codes are recorded concurrently while the video is being recorded. If a recording is made continuously from the beginning of a tape, the Time codes can be used to determine the absolute position of video and audio recorded on the tape.

When you first record on a new (previously unrecorded) cassette, the Time codes are also recorded, starting from zero. If you start recording in the middle of a cassette that has already been partially recorded, and you start where the previous recording ended, the Time code units continue from the ending unit of the previous recording. However, if you start recording in the middle of a tape after a blank section of tape, the Time codes again start from zero.

Unless the Time code is recorded continuously from the beginning of the tape, precise editing may not be possible. To ensure that the Time code will be recorded without interruption, we recommend that you use the Index Search function before starting to record a new scene.

Frame

This is a Time code unit. One frame is equivalent to 1/25 of a second. (Refer to the description of Time codes.)

Tape Counter (Linear counter)

As opposed to the absolute value Time codes (refer to the explanation of Time codes) that are recorded on tape simultaneously when video or audio material is recorded, the tape counter (linear counter) is time information that can change units. The tape counter is reset to zero each time a tape is loaded/ejected, and can also be reset to zero at any other time by pressing **RESET**.

3D-DNR (3-Dimensional Digital Noise Reduction)

To activate the **3D DNR** function, press the **3D DNR** button, so that the "**PB DNR**" or "**REC DNR**" appears on the VCR display. **3D DNR** function will now reduce the noise during playback or recording.

Use of "**REC DNR**" during recording reduces the shaking and distortion that occur during the recording of analogue tapes so that pictures with a high picture quality are obtained. Use of "**PB DNR**" when playing back pictures from an analogue device reduces the amount of noise, thereby making it possible to view pictures with a high picture quality.

- During playback, the picture may become the afterimage. In such a case, cancel the **3D DNR** function.

On Screen Display Messages

Before requesting service, check the following points once again.

The error message is indicated in brackets [].

[Please insert video tape.]

- ☞ ● (REC/OTR), ► (PLAY), ►► (FAST FORWARD), ◄◄ (REWIND) or JOG/SHUTTLE is pressed when no cassette is in the VCR. Insert a video tape.

[Recording not allowed. Check setting of the record-prevention tab.]

- ☞ ● (REC/OTR) has been pressed when using a cassette with the opened record-prevention tab. Use a cassette with the closed record-prevention tab.

Messages of On Screen Display for Editing Operations

[Please insert video tape.]

- ☞ ● (REC/OTR), ► (PLAY) or JOG/SHUTTLE has been pressed when the editing operation using **EDIT MENU** screen is performed in the VCR. Insert a video tape.

[Recording not allowed. Check setting of the record-prevention tab.]

- ☞ ● (REC/OTR) has been pressed when using a cassette with the opened record-prevention tab. Use a cassette with a closed record-prevention tab.

[This function cannot be made in the blank part of the tape.]

- ☞ Are you trying to edit using a blank tape, or a tape that contains a blank segment in the middle? Editing is not possible in blank segments (because there are no Time codes). In order to use such a tape for editing, copy the tape once so that continuous Time codes are recorded on the tape, even if there is nothing else recorded on the tape.

[This function is not allowed in LP-recorded section of the tape.]

- ☞ It is not possible to edit a tape that was recorded in LP mode, or that was recorded partly in SP mode and partly in LP mode. Make a copy of the tape in SP mode and then use that tape.

[This function cannot be made with 16bit mode audio recording.]

- ☞ Does the audio mode change in the middle of the tape? The Audio Dubbing and AV Insert functions can only be used on a tape that was recorded in 12bit audio mode.

[Copying of this material is not allowed.]

- ☞ Tapes which contain copy protection codes cannot be edited, whether in the playback unit or the recording unit.

[Editing cannot be made. Please check switches setting and cables.]

- ☞ Are the necessary cables for controlling the playback unit (Edit cable, LANC cable, DV cable) connected?
- ☞ Is the playback unit turned off?
- ☞ Are **Edit Mode**, **Edit Terminal**, and the **INPUT SELECT** setting on the NV-DV2000 set properly for the desired editing operation?
- ☞ Is there more than one digital video device (including personal computers) connected to the NV-DV2000?
- ☞ Are the NV-DV2000 and the unit connected to the NV-DV2000 both set to control each other (if the connected unit is a digital video device)?

[Audio Dubbing or Audio Mixing cannot be made with DV input mode.]

- ☞ Audio Dubbing and Audio Mixing functions will not work if **INPUT SELECT** is set to DV1 or DV2. Set to A2, A3 or A4.

[AV Insert cannot be made with DV input mode.]

- ☞ AV Insert will not work if **INPUT SELECT** is set to DV1 or DV2. Set to A2, A3 or A4.

[Please select DV input mode.]

- ☞ Is **Edit Terminal** set to DV, but **INPUT SELECT** is set to something other than DV1 or DV2?

[This tape is an incorrect type. Please replace the tape.]

- ☞ A video cassette tape other than a MINI DV cassette has been inserted. DVC PRO cassettes cannot be used with the NV-DV2000.

[This tape is for cleaning only.]

- ☞ Has an attempt been made to record or edit the cleaning tape?

Other messages may also appear.
Follow the instructions in the message.

Before Requesting Service

Before requesting service, check the following points once again.

VCR does not operate correctly

The symptom description is indicated in quotation “ ”.

“VCR display is not illuminated.”

- ☞ **Mains lead** is not connected. Reconnect **mains lead to VCR**.
- ☞ **VCR display** setting is **OFF**. Set **VCR display** to **ON** or **DIMMED**. [☞23]

Playback does not operate correctly


The symptom description is indicated in quotation “ ”.

“The playback picture contains rectangular blocks of picture noise or the whole screen becomes black.”

- ☞ Video heads are clogged or worn. Use the Digital Video Head Cleaner supplied with the VCR. [☞4]
If the picture is still not clear after using it, consult your dealer for further advice.

Recording does not operate correctly

The symptom description is indicated in quotation “ ”.

“ indication flashes whenever recording is attempted.”

- ☞ The record prevention tab on the cassette is open. Close the record prevention tab. (Slide it in the direction of the [REC] arrow.)

Editing does not operate correctly

The symptom description is indicated in quotation “ ”.

“One-Touch-Editing does not work.”

- ☞ Is **One-Touch-Edit** on **Editing functions** menu set to “**ON**” ?

“Editing does not commence; the VCR stays in the recording pause state.”

- ☞ While setting the edit start point on the playback unit, the NV-DV2000 switched from the recording pause state to the stopped state.
- ☞ In order to protect the tape and the head from damage, the NV-DV2000 is designed to automatically stop if it is left in the recording pause state for more than 5 minutes.

“The picture from the playback unit does not appear.”

- ☞ Does **INPUT SELECT** setting match the sockets that are actually connected?
- ☞ Are the cables connected to the playback unit securely?

“Cannot execute the editing operation, or the operation stops suddenly before it is complete.”

The following are possible causes:

- ☞ There is a blank segment in the middle of the tape in the recording unit.
- ☞ The tape speed (**SP/LP**) or the audio mode (**12bit/16bit**) changed in the middle of the tape in the recording unit.
- ☞ The end of the tape was reached in the NV-DV2000.
- ☞ The tape that is being used either does not contain continuous Time codes, or contains two identical Time codes.
- ☞ Does **INPUT SELECT** setting match the sockets?
- ☞ The **INPUT SELECT** setting or **Edit Terminal** was changed while editing was still in progress.
- ☞ An edit start/end point was set within 20 seconds of the beginning of the tape.

“The **EDIT MENU** screen does not appear, even though **EDIT MENU** has been pressed”

- ☞ Is **Edit Mode** set to **PASSIVE** or **RECORDER**?
- ☞ Is the NV-DV2000 set as indicated below in the following instances?
 - With **Edit Terminal** set to **DV**, is **Edit Mode** set to **PLAYER** or **PASSIVE**? (when two NV-DV2000s are connected)
 - With **Edit Terminal** set to **EDIT**, is **Edit Mode** set to **PASSIVE**?

“Control of the playback unit was lost while editing was in progress”

- ☞ If the playback unit is left in the pause state for more than 5 minutes, it may automatically stop in order to protect the tape and the head from damage.
- ☞ If the playback unit is a video movie camera, control is not possible if the video movie camera is in **CAMERA Mode**. Put the video movie camera into **PLAYBACK (VCR) Mode**.

“**Programme Editing** is not available for selection on the **EDIT MENU** screen”

- ☞ Programme Editing is not available if the playback unit that is connected does not have a Time code or tape (linear) counter display.

“After setting the edit start/end points, the next screen does not appear when **OK** is pressed”

- ☞ Have all three points in the edit start/end points been set on the playback unit and the recording unit? Programme setting is not completed unless 3 or more points are set.
- ☞ Are the edit start/end points set in the wrong order (i.e., the editing end precedes the in point)?

“Cannot set programme”

- ☞ Have the maximum number of programmes already been set?

“A set programme is skipped”

- ☞ Are there at least 4 seconds between the edit start point and the end point?
Editing may not be performed properly for a programme with a set duration of less than 4 seconds.

“Cannot adjust the edit timing”

- ☞ The timing cannot be adjusted if the playback unit that is connected does not have a Time code or tape (linear) counter display.

Editing Controller does not work correctly

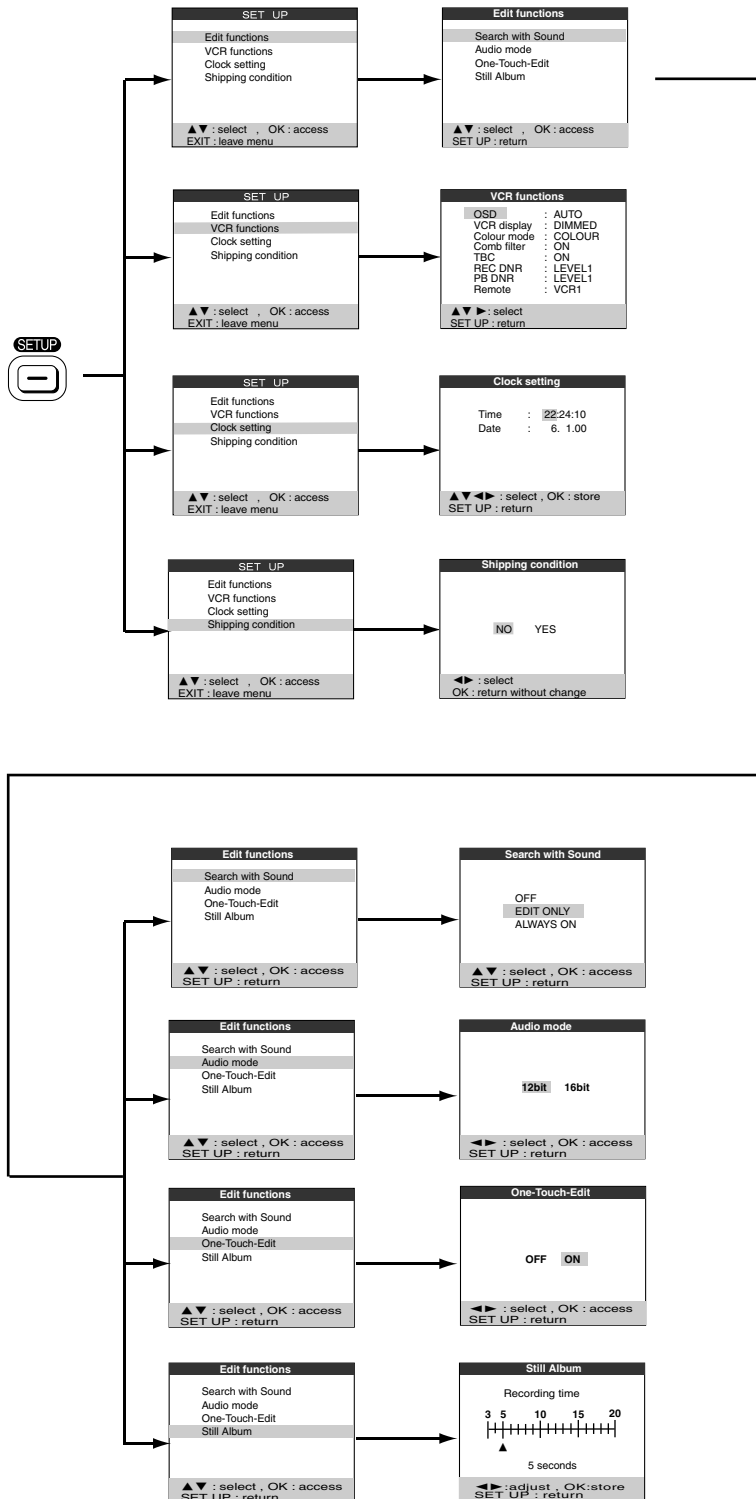
The symptom description is indicated in quotation “ ”.

“Editing controller does not operate correctly.”

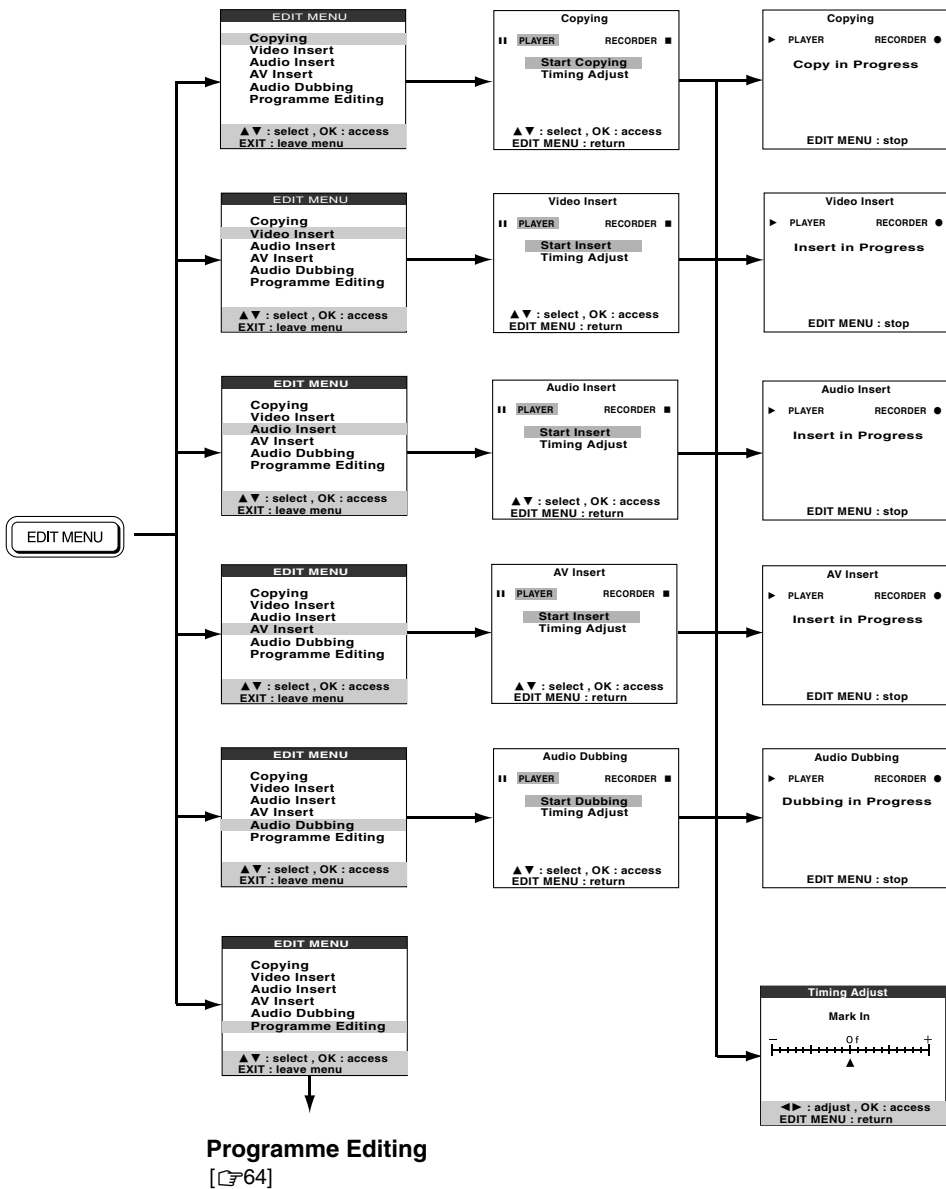
- ☞ Remote controller transmitter beam is not reaching the VCR. Ensure that Editing controller is being pointed at the VCR and that the transmitter beam is not obstructed.
- ☞ Distance is too far. Use Editing controller within 7 m of the VCR. If operation is not possible in this range, replace the batteries.
- ☞ Batteries are spent. Replace the batteries. Note the precautions for replacement on [☞12].
- ☞ Batteries are incorrectly fitted with (+/−) reversed. Fit the batteries correctly as shown on page 12.
- ☞ Wrong remote control mode has been selected. Set to the correct remote control mode [☞24].

Flow Chart for On Screen Displays

SET UP On Screen Displays

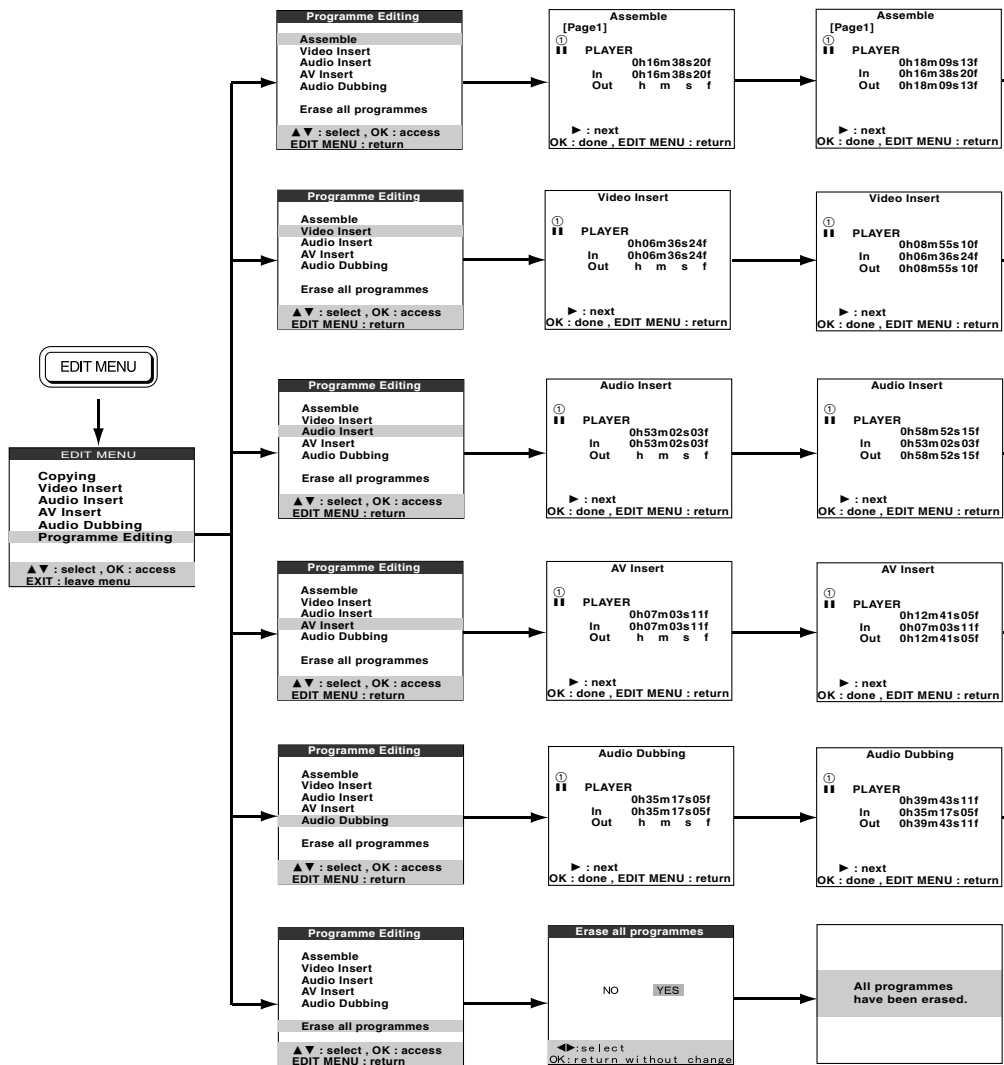


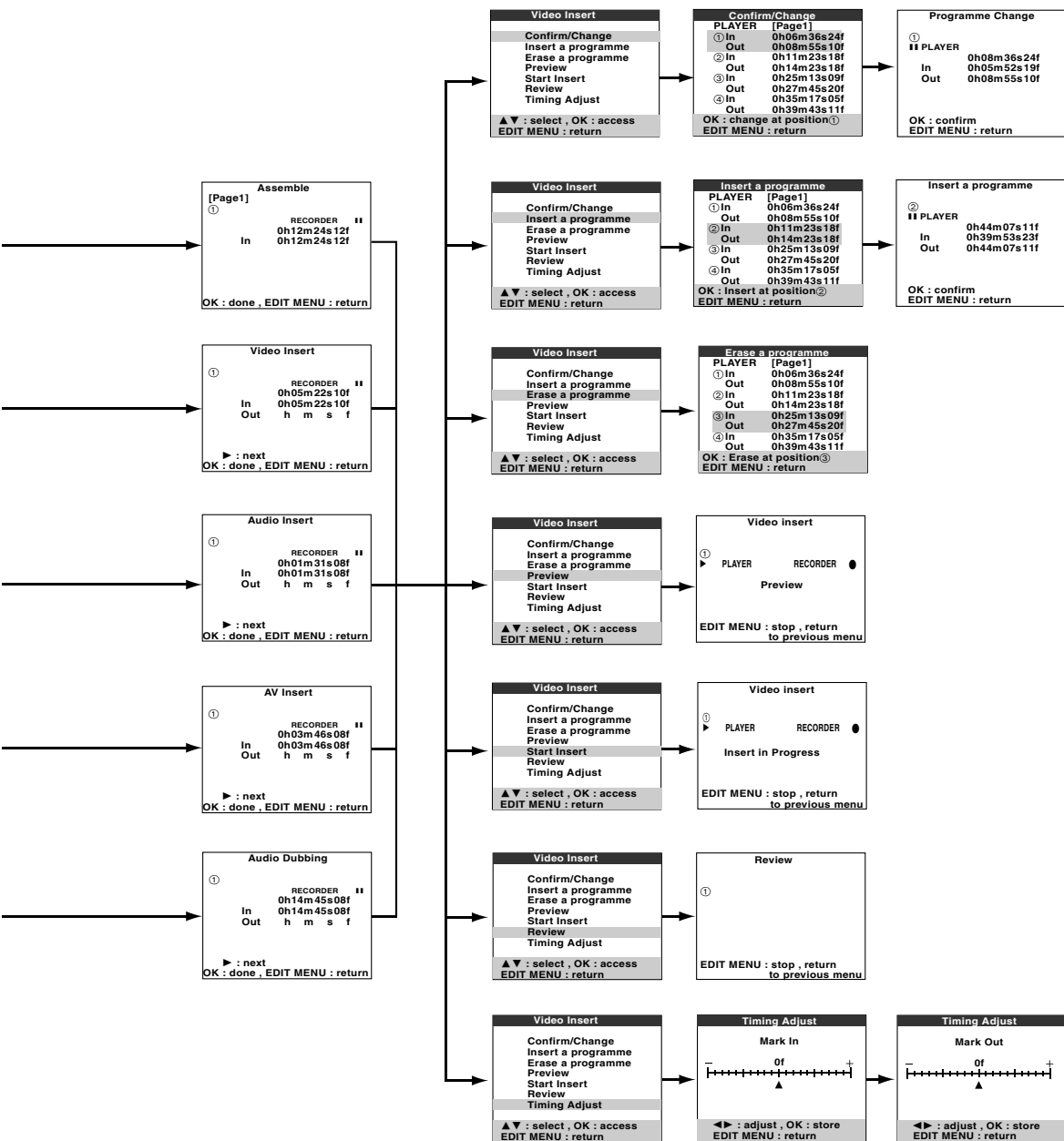
EDIT MENU On Screen Display (Manual Editing)



Flow Chart for On Screen Displays (continued)

Programme Editing On Screen Displays





Specifications

NV-DV2000EC

Power Source:	220–240 V AC 50/60 Hz
Power Consumption:	22 W
Power Consumption When in Standby Mode: (with display off mode)	Approx. 4 W

Video Recording System:	2 rotary heads, Digital Component		
Audio Recording System:	PCM Digital Recording; 16 bit (48 kHz/2ch), 12 bit (32 kHz/4ch)		
Video Heads:	2 heads		
Tape Speed:	SP; 18.831mm/s LP; 12.568 mm/s		
Tape Format:	Mini DV tape		
Record/Playback Time:	SP; 80 min	LP; 120 min with DVM80E	
FF/REW Time:	approx. 80 s with DVM60E		
VIDEO			
Television System:	CCIR; 625 lines, 50 fields, PAL colour signal		
Modulation System:	Digital Component recording		
Input Level:	AV1/AV2;	1.0 Vp-p,	75 ohm, terminated
	VIDEO IN (AV3/AV4);	1.0 Vp-p,	75 ohm, terminated
	S-VIDEO IN (AV3/AV4);	1.0 Vp-p,	75 ohm, terminated
Output Level:	AV1/AV2;	1.0 Vp-p,	75 ohm, terminated
	VIDEO OUT (AV3/AV4);	1.0 Vp-p,	75 ohm, terminated
	S-VIDEO OUT (AV3/AV4);	1.0 Vp-p,	75 ohm, terminated
AUDIO			
Input Level:	AV1/AV2;	2Vrms (1kHz, 0dB),	more than 10 kohm
	AUDIO IN (AV3/AV4);	2Vrms (1kHz, 0dB),	more than 10 kohm
Output Level:	AV1/AV2;	2Vrms (1kHz, 0dB),	less than 1 kohm
	AUDIO OUT (AV3/AV4);	2Vrms (1kHz, 0dB),	less than 1 kohm
Audio Track:	16 bit (48 kHz/2ch);	1 track, 2 channels	
	12 bit (32 kHz/4ch);	2 track, 4 channels	
Digital Still Picture:	Digital Still Picture Output, Control Signal Input/Output (Transfer rate; max. 115 kbps)		
Digital Interface:	DV TERMINAL (I.LINK, 4-pin)		
Audio Frequency Response:	20 Hz–20 kHz (16 bit) 20 Hz–14.5 kHz (12 bit)		
Operating Temperature:	5°C–40°C		
Operating Humidity:	35%–80%		
Weight:	2.8 kg		
Dimensions:	280 (W)×91.5 (H)×222 (D) mm		
Standard Accessories:	1 pc. Edit Cable	1 pc. S-Video Cable	
	1 pc. DV Cable	1 pc. AV Cables	
	1 pc. Digital Video Head Cleaner		
	2 pcs. "R6" size batteries	3 pcs. AC Mains Leads	
	1 pc. Editing Controller (EUR571507)	1 pc. AC Plug Adaptor	

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

[illegible]



Printed in Japan



F0600Gy0 (1500[Ⓐ])



Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan